

SUBJECT SIGN-POST

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AMERICAN BUILDER AND BUILDING AGE

THE FIGHT TO REDUCE TAXES

THE National Association of Real Estate Boards, at its convention in Baltimore in May, adopted resolutions stating that it "viewed with alarm the steady upward trend in government costs and taxes" and asking the president of the United States to call a national tax conference in which the federal, state and local governments and representatives of the taxpayers would be asked to participate, "to the end that means may be devised for co-ordinating the functional operations of the government and securing efficiency and economy in services performed and to adjust the revenue system to more nearly meet the ability of the citizens to pay."

The AMERICAN BUILDER AND BUILDING AGE has in recent issues emphasized the necessity of action to solve the tax problem of the American people. There are two things the matter with taxes in this country. First, they are unfairly distributed, and, second, they are too high. The taxes levied on real estate generally are excessive in proportion to those levied upon other kinds of property. The principal thing that is the matter with taxes, however, is that they are too high. The tax problem cannot be solved by shifting taxes from some kinds of property to others. As long as government authorities are allowed merely to go through the motions of shifting them about the taxes upon most kinds of property, and especially upon real estate, will not be reduced. The only solution of the tax problem is to reduce total taxes. The only way in which that can be done is by reducing the expenditures of our various governments.

Greatly increased, and still increasing, government expenditures and taxes present probably the most important problem with which the American people are confronted. Statistics presented by one of the speakers at the convention of the National Association of Real Estate Boards show that total government expenditures, local, state and national, increased from \$10,254,000,000 in 1923 to about \$13,000,000,000 in 1928. In the same period the total taxes collected increased from \$7,234,000,000 to a total now estimated at \$10,162,000,000. The

difference between the total expenditures made and the taxes collected in the years mentioned was derived from the issuance of bonds. Of course, the interest upon these securities must be paid in taxes.

Government expenditures consist of those made for the performance of the ordinary functions of government, and those made for highways, waterways, buildings, and other public works. An economic theory which has received widespread acceptance is that government expenditures upon public works should be severely restricted when general business is good, to limit at such times government competition with private industry for labor and materials, and then greatly enlarged in periods of depression to help maintain employment and support general business. The facts show, however, that during recent years when general business was good, government expenditures upon public works were largely increased in disregard of this theory. Now, during a period of depression, they are being further increased in nominal accordance with the theory. About \$1,500,000,000 is being spent this year upon the construction of new highways and about \$500,000,000 upon new federal buildings.

It may or may not be economically sound to make such increases in government expenditures upon public works during a period of depression. In spite of them, the depression has continued. We will be better able to judge of their effects after the depression is past. One thing, however, is certain—every dollar spent by any government is a dollar that must be paid in taxes by somebody and cannot be used for any other purpose. The construction and maintenance of highways, for example, are paid for partly from general property taxes and partly from automobile license fees and gasoline taxes, and a man whose taxes are increased to pay for highways or public buildings has just that much money taken from him which he cannot spend upon modernizing an old home or building a new one. Furthermore, unless the new highways built are actually needed, their construction does not cause any increase

in the value of property to offset the reduction in its value caused by the increase of the taxes upon it, and unless new public buildings are actually needed their construction merely results in government offices being moved to them from other buildings, and thereby depreciates the earning capacity and value of other buildings in the same community. If there is justification for increasing government expenditures upon public works during the depression, then there will be justification upon the same economic theory for severely reducing them as the depression passes.

The most outstanding economic and social need of a large majority of the American people is for larger and better homes. Increased government expenditures increase the taxes upon homes, and thereby tend to make it impossible for this large majority of the people to rent or own larger and better homes. As the AMERICAN BUILDER AND BUILDING AGE has pointed out in the past, the principal competitor of the home in this country is the automobile. Powerful business interests spare no effort to promote the construction and improvement of highways at public expense to increase the market for road-building machinery and materials and for automobiles and the fuel they consume. The public is prone to favor such expenditures because it thinks of the pleasure of motoring on these highways and does not realize how large a part of the enormous increase in taxation is being caused by highway construction and maintenance. In addition, the public allows large buses and trucks to use these highways without paying adequately for the damages and costs they cause, with the result of subsidizing commercial transportation upon the highways at the cost of excessive taxation of private motorists and property owners in general.

A people, like an individual, cannot afford things for which they cannot afford to pay, and the deficits being incurred by many of our governments, including the deficit of about one billion dollars incurred by the federal government during the last fiscal year, and the many thousands of pieces of property in all parts of the country that are being sold for taxes, demonstrate that our governments have been and are still making expenditures that the people cannot afford and that are contrary to the public interest.

The real estate boards have taken the lead in a movement for general reductions of government expenditures and taxes. Every increase in government expenditures results in relatively larger increases in taxes upon real estate, and especially upon residential property, than upon any other kind of property, increases the cost of owning or renting such property and thereby restricts its construction and improvement, and helps to prevent the American people from having the larger and better homes that they need. Reductions of government expenditures and of taxes, on the other hand, will stimulate building construction and especially residential construction. Consequently, the movement led by the real estate boards for reductions of taxes should receive the strong and unanimous support of all builders.

PRICE WARS AND PROSPERITY

In the June issue of AMERICAN BUILDER AND BUILDING AGE appeared an editorial criticizing the cut-throat bidding tactics of some builders and urging more emphasis on *quality construction at a fair price*. It was shown that most of the evils of the contracting business can be directly traced to unjustified and unprofitable price cutting which ultimately results in a Battle of the Builders to see who can do the most work for nothing!

Contractors are not the only ones in the building industry right now who are working for nothing. Consider the plight of many of the building material manufacturers. Not only are they selling at a price that eliminates all thought of profit, but many are actually vieing with each other to dispose of their products at a loss! Deficits are piling up that are a serious menace, not only to the building industry, but to industry at large.

Beyond a doubt, low building material costs, where they can be economically and honestly justified, are helpful to the building industry. But no one wants to see the bankruptcy of important groups of manufacturers for the sake of the few cents on material prices that make the difference between profit and loss to them. After all, the small percentage cut by the manufacturer as a result of a price war—the few cents that mean ruin to him—does not mean much to the home buyer. The many other costs that enter into the modern home, standing on a fully developed site, far outweigh this small item of the factory cost of the building materials. What is more important to both dealer and builder is that the price be *stabilized*.

A fair and reasonable price, stabilized at a point where dealers and builders can count on its not sagging out from under them, depreciating stocks and upsetting estimates, is what is needed. This is more desirable to them than the destructive slashing and irregular, costly fluctuations of the price war.

Such cut-throat competitive selling as has hit the manufacturers of portland cement, common brick, face brick, roofing and asphalt shingles, lumber, millwork, insulation, metal lath, steel windows, steel joists, gypsum, clay products, tile and many others has far-reaching harmful results. These industries, through their trade associations, have conducted notable and valuable researches in building products, improving the quality of modern construction and contributing untold assistance to its advance. A competitive situation such as prevails today prevents such forward looking, enlightened work. Should this situation continue the building industry, long noted for the superior quality of its trade association work, will revert to the state of anarchy and wasted effort characteristic of twenty years ago.

Perhaps the situation will work itself out with improving conditions. Or perhaps a still wiser course would be to inaugurate a series of informal conferences among manufacturers to see whether an immediate improvement may not be brought about. The situation is one that demands immediate attention.



Easy Transportation Encourages Suburban and Country Home Owning

Around Every City and Town Is a Widening Circle of Modern Homes. A generous tract of fertile soil—a garden—flowers—trees—fresh air—sunshine—peaceful, wholesome surroundings—all these are obtainable today at the price of cramped quarters in the city. The automobile is repaying its debt to the building industry by bringing each year thousands of new families out into the open country and into the new home-owning suburbs.

Builders Are Producing Thousands

"Give People What They Want and They Will Buy" Say Successful Builders Whose Programs for One, Two and Three Year Periods Call for Increasing Numbers of Homes

Is residential building beginning to turn the construction tide? Already, in many sections where large amounts of idle capital have been released into mortgage channels, extraordinary demand has arisen for the high-value, low-priced homes now being made available by builders. In many localities, an unusually keen interest in home construction is being displayed by all classes and sales are going forward rapidly in those types of homes that are being built to suit the public's needs, desires and means.

At a time when public works and utilities are not duplicating the record level of a year ago and when commercial and industrial building is at a low ebb, residential building is standing out as the most active division of the building industry and is playing an increasingly dominant role in the comeback of construction.

Favorable Residential Outlook

"We are now approaching that period of the year," records the F. W. Dodge Corporation, "when comparisons, on a floor space basis, with the corresponding months of 1930 may be expected to look more favorable so far as residential building goes."

In 37 Eastern States, in the month of May, a volume of residential construction was reported comparing very favorably with that recorded for the previous year, and in the "housing developments" category an actual advance in valuation was shown for May over April, 1931, and over May, 1930.

Housing development construction for the first five months of 1931 exceeded by five million dollars the recorded construction for the first five months of the previous year in this category. And this was on a valuation basis. If the comparison had been made of floor space, the increase would undoubtedly have been greater.

In those communities where financial interests have seen the light and have released funds for home building, an awakened interest in house construction has stimulated activity, brought many homes into the construction stage and is right now stimulating the demand for high-value construction at reduced cost.

At a recent gathering of home builders and subdividers from all parts of the country, a representative of AMERICAN BUILDER AND BUILDING AGE asked how many builders were pursuing active building programs at this time. The response was enlightening. One well-known community developer in the West has a program of fifty homes; an Eastern developer reports twenty-five homes in progress, another has begun the first thirty of its new program of 200 homes.

A Baltimore builder is actively engaged on a program of five groups of houses—six houses to a group—which will sell for \$8,500 to \$11,000. Since October, 1930 this builder has erected and sold 23 houses ranging in price from \$10,000 to \$18,000.

Another high-class builder in Baltimore has 18 homes now under construction and will start 12 more in August. This builder is operating as close to \$12,000 as it is possible to get his homes, which are of unusual quality and of charming design. He is giving better

POPULAR TYPES OF HOUSES THAT ACTIVE BUILDERS

1. ENGLISH OR COLONIAL SUBURBAN TYPE

On individual sites and in high-grade developments in the suburbs of cities, both contractors and merchant builders are putting up houses in English and Colonial style. These homes, as a rule, are being well and distinctively designed in order to satisfy the prospect who comes above the \$10,000 class. This type of home ranges in price from \$10,000 to \$20,000 and over. In most sections the Colonial is coming back strongly into favor though the English type still retains its popularity among many prospects. Stone and brick facing on the lower story is a new, distinguishing feature. Two bathrooms are usually included.



2. COMPACT BRICK AND WOOD TYPE

A number of builders have succeeded in working out excellent interior layouts and are combining them with attractive exteriors that are inexpensively produced yet have an instant popular appeal. A common combination of materials is brick and wood, the brick providing a facing for the street side, and shingles or stained siding producing an attractive effect for the second story. Often the garage is tied into the house shown here. These homes sell for under \$10,000. Fifty-seven of this type have been built in one town in New Jersey and are selling rapidly. There is a large unsatisfied market for this type house.



of New Houses

value than ever and with a 20 per cent decline in costs is able to provide homes with the most modern and luxurious equipment, such as convection heaters, gas-fired boilers, first-grade millwork, copper screens, vitreous china, chromium fittings, high-class hardware, and still offer these quality homes at a much lower selling price.

One of the biggest developers in the country in Houston, Texas, reports an unprecedented interest on the part of the public as evidenced by unusually heavy attendance at his model home openings. He has thirty-six homes under construction, 20 of these being for sale and 16 for owners. The price range is from \$11,000 to \$51,000, including the site. The successful selling of the homes now under construction insures a continuance of his home building program at the same rate.

From Virginia a builder reports 12 houses under construction at prices ranging from \$5,000 to \$8,000. He has built 51 houses in the past four years and estimates the present saving in cost at 15 per cent. A

(Continued to page 98)

5. GROUP HOUSING OF BRICK

In some cities, group houses, providing accommodations for six and eight families, have become popular. The English style of design is common in these types. One Eastern builder is now engaged on a program of five groups, of six families each, to sell for \$8,500 to \$11,000. First floors contain vestibule, living room, dining room, breakfast room and kitchen and upstairs there are three bedrooms and a bathroom. Basements are semi-finished. Papering, finish, hardware, trimwork and electrical fixtures are in good taste and of excellent quality. Homes may be bought on easy payments.



ARE NOW ERECTING

3. STORY AND A HALF AND BUNGALOW

The demand for homes in the lower price ranges has compelled builders to seek attractive bungalow and story-and-a-half designs that provide a maximum of room with a minimum of construction cost. In the Southwest and California the stucco bungalow predominates but in other sections Colonial cottages of frame construction are becoming increasingly common. Roof dormers are popular and a lot of attention is paid to entrance and chimney treatment. Room arrangements must be convenient and as commodious as possible. Homes of this type are in demand in many sections of the nation at the present time.



4. ROW HOUSE OF BRICK

In several Eastern cities the most popular type of house is the row dwelling of brick, selling around the \$7,200 mark. Facades are ornamentally treated in popular style, interiors are lavishly appointed and equipped, and financial terms are easy. Some of the things which row houses of this type contain are: Open fireplaces, leaded glass windows, electric refrigerators, insulated gas ranges, colored tile sinks, chromium plated faucets, ironing boards, linoleum floors in kitchen, tiled bathroom walls, shower stalls with chromium plate glass door, boudoir table, medicine cabinet, extra lavatory and lounge room in basement.



Buyers Demand More

DESIRABLE location, sturdy construction, attractive architecture, building materials of national reputation, up-to-the-minute appointments and conveniences, and a selling price within the means of the average family are the prerequisites for success in residential construction today," says one successful builder who has just started on a new program of 1,000 dwellings.

"In general terms," says another builder, "the modern homes represent greater completeness and comfort, more efficiency and better taste in exterior and interior design. Features that have been developed include the studio living room, the basement lounge room, built-in bookcases and colorful tile in the bathroom. Interior design has shown us that equipment can be attractive as well as useful and this is the keynote of the present-day home."

Federal Mortgage Bank Proposed

Government Leaders Favorable to Study of Central Discount Home Financing Institution Similar to Federal Reserve Bank

LEGISLATION EXPECTED AT NEXT SESSION OF CONGRESS

A "FEDERAL RESERVE" Mortgage Bank to function as a central discount market for home mortgages and to serve the home building industry in much the same way that the Federal Reserve System now serves general business is being actively sponsored at Washington. An Associated Press dispatch of June 11 states that government officials are studying the central mortgage systems of other nations to determine the practicability of creating a federal mortgage bank system to aid prospective home buyers in the United States. Senator Fess of Ohio conferred on June 10, with President Hoover on this problem, the dispatch states. He discussed particularly the central mortgage systems of certain of the European countries.* The President has frequently voiced his dissatisfaction with the present system of home financing, describing it as "the most backward segment of our whole credit system."

The movement toward a more adequate mortgage banking system under federal auspices received substantial support at the recent realtor convention in Baltimore and, in line with a resolution adopted by the convention, Harry S. Kissell of Springfield, Ohio, President of the National Association of Real Estate Boards, has laid before President Hoover and Secretary of Commerce Lamont for purposes of study a tentative suggestion for meeting the needs of home financing as outlined by the Executive Committee of the association, and unanimously approved by its Board of Directors.

Movement Has Strong Backing

The proposal for a federal reserve mortgage bank was made by this publication about a year ago and since that time has been much under discussion and has been studied by various officials in Washington, by the officers and directors of the National Association of Real Estate Boards, the U. S. Building and Loan League, the Associated General Contractors, and others. The presentation of this central mortgage bank project at the Baltimore convention by Marcus Nadler of the Institute of International Finance and by Secretary Herbert U. Nelson, and its endorsement for study marks an important step forward.

Further conferences with the administration authorities at Washington will now be in order, together with the drafting of a bill to be submitted to the next session of Congress next December. President Kissell of the realtor association has offered the government the services of a committee of five experts to confer and advise with the government experts in working out the details of the proposed federal mortgage bank.

The tentative suggestion for meeting the needs of home financing, as approved by the board of directors of the realtor association and laid before Mr. Hoover, outlines the needs as follows:

*For detailed information regarding these, see report on next page, of convention paper by Marcus Nadler, "Central Mortgage Banks Abroad and Their Lessons for Us."

"There has always been a weakness in our system of home financing. Government has offered its facilities for the development for various features of the financial and business structure but up to this time the important field of home financing has not received its proper attention. Immediate consideration must be given to this grave national problem. A prompt solution will hasten economic recovery.

"Homes which have a permanent as well as a resale value never have been financed on as liberal terms as consumption goods, the value of which is destroyed in the use. Luxuries have been purchasable on easier terms than one of the prime necessities of life—shelter.

"Long term financing, say 20 years, with installment payments on principal not exceeding 4 per cent per annum, and with certain rights of pre-payment, is a necessity; and would enable the family to accumulate a reserve for times of stress.

"Such a system of long term credit requires that there be central banks of discount to serve mortgage companies, building and loan associations, and savings banks just as the Federal Reserve System serves the commercial banks. Such a structure can be created only by the federal government.

"The weakness of the present system is shown by the following facts:

1. Banks, even when in ample funds, frequently must refrain from lending on mortgages because of the danger of jeopardizing their liquid position. Building and loan associations in many localities become periodically subject to frozen condition so far as accepting new mortgages is concerned. Depositors under such circumstances often are unable to withdraw their savings, a fact which disturbs the whole financial structure.

2. Many lending companies have become very restrictive and selective in their mortgage loan policies.

3. Short term home financing has been always a hazard, deterring buyers, investors and builders. The home owner who is unfortunate enough to have a short term loan come due in a period of depression is a victim of the present system. Innumerable homes have been lost to their owners this past year due to inability to refinance mortgage loans.

4. The excessive cost of junior financing has increased the cost of homes and at the same time has driven thousands of small builders out of business.

Central Mortgage Bonds Attractive Investment

"Long time real estate mortgage investments should be made available as collateral security for debentures which would be sold on the open market and would be comparatively liquid. To accomplish this purpose the following tentative suggestions are offered for discussion:

1. The federal government should create a central residential mortgage bank with regional discount branches, the function of the central bank being supervisory.

2. The members of the regional discount banks shall be local mortgage banks chartered under an act of Congress. Such local banks would be authorized to take subscriptions to their stock from commercial savings banks, trust companies, building and loan associations, mortgage companies and individuals dealing in mortgages under certain uniform regulations laid down in an act of Congress for the control and operation of such units. These local mortgage banks should in no case

deal directly with the borrower. Their functions should be to determine the availability of, and to submit to the regional banks for purchase or rediscount, those loans in the hands of stockholding mortgage dealers or brokers meeting its requirements for rediscount. Each local unit should be a member of its regional mortgage banks.

"3. The function of the regional bank would be to purchase first mortgage loans from its members only and to issue debentures secured by such mortgages as well as by its own capital and surplus. The regional bank would secure its capital and surplus through the subscription of the local units. Purchasable paper

should comprehend only first mortgages on urban residential property, long term and amortized.

"4. Regional banks should lay down certain regulations as to procedure and appraisal which should be approved by the central bank before becoming operable in the region.

"5. It should be the policy of this entire system by using conservative appraisal methods and by requiring amortization payments beginning immediately when the loan is made to increase up to 75 per cent the percentage of value that may be lent with safety, thus eliminating the costs and hazards of junior financing."

Central Mortgage Banks Abroad

—and Their Lessons for Us

PROPOSAL that a central urban discount corporation be created whose function would be to buy or discount mortgages from the various present agencies lending money on urban real estate was made before the National Association of Real Estate Boards at its recent Baltimore convention by Marcus Nadler, assistant director of the Institute of International Finance. Establishment of such an institution, enabling the pooling of individual mortgages and the issuance of bonds secured by these mortgages, is greatly needed to stabilize the flow of funds into the real estate and building industry, and would be an important and powerful factor in the restoration of more normal business conditions. It would not only bring about a rapid revival of industry and trade, Mr. Nadler said, but would also lay the foundation for stabilizing industry in this country in the future against booms and depressions.

Central mortgage institutions which exist in practically every country of Continental Europe and in a number of countries of South America, established in many cases with the aid of the government, have given the home-owners of these countries in the financing of their homes access to the capital markets of the world, he pointed out. They have enabled the citizens of Germany, France, Denmark, Hungary, Finland, Yugoslavia and other countries to borrow money in the United States with which to finance their home building and other real estate development. Mortgage bonds of European and South American central mortgage institutions are now outstanding in the American markets to the amount of more than two hundred million dollars, Mr. Nadler said.

Would not Compete with Existing Institutions

"The central urban mortgage discount corporation should not deal directly with the public," Mr. Nadler held. "Under present conditions a central bank for urban real estate which would be in direct contact with the borrower, as are central mortgage banks in Europe and South America, is out of the question. Establishment of a co-operative system, such as is in use in some European countries would not be the best solution. Americans, as a whole, are not given to co-operation. To organize home owners into co-operatives might be a task that would last for decades. The most practical plan to meet American conditions, it seems to me, is a central urban mortgage discount corporation that would buy or discount mortgages from savings banks, small commercial banks, building and loan associations, insurance companies, mortgage corporations, and others whose main function or business is the lending of money on urban real estate. On the basis of these mortgages,

THERE is a definite need for a mortgage system in this country that will make credit more readily available and on longer terms for the financing of homes. In a speech before the convention of the National Association of Real Estate Boards in Baltimore, Professor Nadler described foreign mortgage systems and outlined a plan for a central mortgage system in the United States. His plan may be the basis for a study by national authorities on the question of establishing such a system here. The whole subject has aroused widespread interest and we are publishing excerpts from his convention address for the information of our readers.

the central mortgage discount corporation would issue its own bonds which would be secured: (a) by the mortgages of the individual borrowers, and (b) by the capital and surplus of the central bank.

Analyzes Need in Present Banking Situation

"The function of such an institution should be to take into consideration all the existing mortgage facilities and weld them together without at the same time bringing up new competition and further complicating the real estate market.

"The main advantage of such an institution would be that it would immediately make individual mortgages marketable. Mortgages lack the element of shiftability. A personal note can be discounted at the bank. The bank is not bound to carry this note until maturity. It can, if it so wishes, discount it with the central bank, in our case the Federal Reserve System, and thereby obtain cash immediately. As regards other securities, the holder can dispose of them almost at any moment in the open market. Individual mortgages, however, not only cannot be sold regularly in the open market but there are in the United States no facilities for discounting such mortgages and there is, therefore, no way of shifting the burden of financing a home from one institution to another.

"The lack of marketability and the lack of shiftability of mortgages are factors primarily responsible for the high cost of real estate financing and in my opinion have greatly contributed to the frozen state or even collapse of a number of our small banking institutions. This is particularly deplorable at a time like the present when there is a great hesitancy on the part of bankers and capitalists to make long-term commitments particularly as regards securities which have no free open market. This situation is primarily responsible for the fact that, although short-term interest rates are lower than during any other period in the history of the country, mortgage loans still bring a very high rate of interest. If one contrasts this situation with the fact that in

Switzerland mortgage bonds are selling in the open market to yield not more than 4 per cent and that the Credit Foncier in France is at the present time in a position to sell its bonds at a yield below 3 per cent, one becomes immediately aware of the abnormal situation prevailing in the United States.

"If we could adopt or establish a system of urban real estate financing which would keep this industry on an even basis, we would lay the foundation for one of the most powerful factors aiming toward the stability of industrial activity in this country.

"Under present conditions, banks, commercial as well as savings, building and loan associations and other institutions engaged in the lending of mortgage loans, take mortgages only in accordance with their resources. Thus, in boom times, when plenty of capital is available, there is a boom in building. In slack times, when these institutions restrict their lending, building immediately decreases. If a central urban mortgage discount corporation were established, the main function of the savings banks, building and loan associations, and similar banks would be to accumulate mortgages and turn them over to the central institutions as the occasion arose. Thus the process of lending mortgage money would be a steady one and would not be greatly influenced by economic conditions in the country. Such transactions could be very profitable to the individual institutions as well.

"On the other hand, in a period like the present where there is a great demand for high grade bonds the central bank could increase rapidly the issue of its securities and thereby place millions of dollars at the disposal of the building industry. The effect which increased building would have on economic conditions is only too obvious and does not need to be repeated here."

European Banks Organized to Draw on International Capital

The advantage of drawing capital from all over the world at low rates was the initial reason for the action of a number of European countries in establishing a central mortgage banking system, Mr. Nadler brought out. The German Government, for example, in 1925, realizing the great need for capital and knowing that this demand could not be met in the domestic market, established an institution large enough to command credit in the international markets, with the result that the German Central Mortgage Bank borrowed in the United States alone over \$100,000,000 at rates which could not be obtained in post-war Germany. A number of German banks, Hungarian, Chilean, Colombian, Finnish, Italian and those in other countries, have obtained long-term funds here and have used them for the purpose of making long-term mortgage loans to individual borrowers. Most of these bonds are listed on one or the other important stock exchange in the American market and therefore enjoy great marketability. In countries like France where there is an abundance of capital, the operation of a central mortgage bank has contributed greatly to the reduction of the cost of real estate financing.

Mortgage Banks in Europe of Three Classes

Mortgage banks as they operate in Europe may be classified into three main groups: (a) central mortgage banks, (b) co-operative mortgage banks, and (c) private mortgage banks.

Central Mortgage Banks are usually established by a special charter under strict government supervision. They can be found in Chile, Argentina, Colombia, Yugoslavia and a number of other countries. These banks deal directly with the public and make loans on all

classes of property, urban as well as agricultural, up to a certain percentage of the assessed value of the land.

Similar in character to the central mortgage banks described above is the Credit Foncier of France which, however, is a private institution. The Credit Foncier was established by special charter in 1854 and its organization was similar to that of the Bank of France. It specializes particularly in urban real estate. The bonds of the Credit Foncier enjoy a privileged position in France. They are eligible for loans with the central bank and in general are considered as the highest type of security available in the Paris capital market. The strength of these bonds may be seen from the fact that the present time Credit Foncier bonds are selling to yield about 2.5 per cent. Although the Credit Foncier is a private institution it is closely supervised by the government.

Mortgage Banks operating on a co-operative basis are a type of institution found particularly in the Teutonic countries such as Germany, Denmark and Scandinavian countries, our own Federal Farm Land banks having been patterned after this system. The co-operative turns over either mortgage of the original borrower or its own bonds based on these mortgages to the central bank which then furnishes the cash. In each case the bonds which are sold to the ultimate investors are those of the central bank and therefore enjoy a better credit standing.

Investors Have Never Lost a Cent

In spite of the long experience with this type of institution in Germany and in the Scandinavian countries, where these bonds were in existence many years before the war, the investors have never lost a cent.

In the case of Denmark certain bonds issued by the mortgage bank for the Kingdom of Denmark, which acts as a central agency for all the various co-operative associations, are used by the Danish government to enable people with small means to build their own homes at very low cost.

Private Mortgage Banks in European countries operate along the same lines as the various title guaranty and trust companies operate in the United States, with the difference that although these institutions are owned by the stockholders and are operated for profit they are under the close supervision of the various governments. These private mortgage banks in most cases have access to the central bank. In addition to the private mortgage banks already described, one finds in a number of countries special mortgage banks which although owned by the stockholders enjoy special privileges. Such institutions are found in Hungary, Finland and other countries.

The Co-operative Society of Hungarian Mortgage Institutions, established in 1927 by several Hungarian banks which are known as member banks, is one of the most interesting among them because in many respects it can be adapted for use in the United States without any difficulty.

Each of these types of mortgage banks is to be studied at Washington and the necessary legislation proposed to give the American home buying public the benefit of such a federal mortgage banking system.

WRITE your Congressman if you favor the establishment of an American Federal Home Mortgage Bank along these lines that have proved so satisfactory abroad.

—THE EDITOR.



EIDSON Photo

BRISCOE & DIXON, Architects

Homes that Satisfy

Ten Designs in Good
Taste—Full of Suggestions
for Home Builders



Spanish Details

The Dining Terrace, Home of
Mr. and Mrs. Bradford
Duncan, Tucson, Ariz.

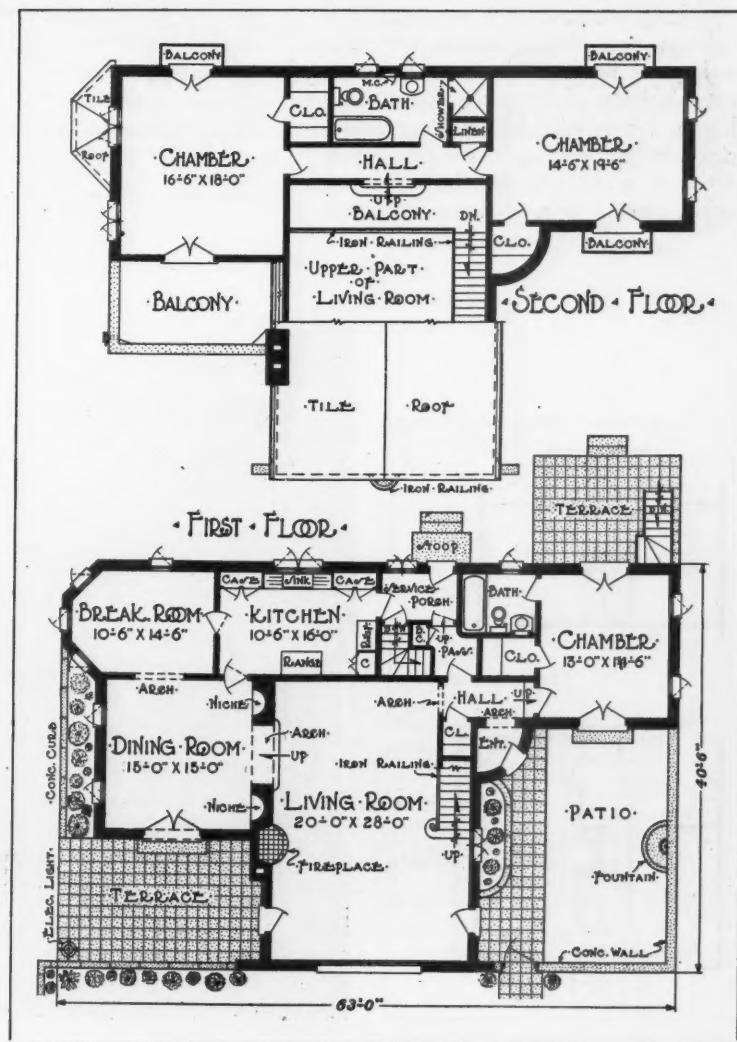
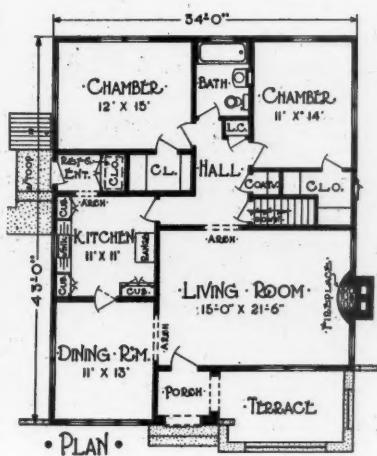
Spanish Style Cottage De-
signed and Built by Joe
Carlucci.





Basking in the Sunshine

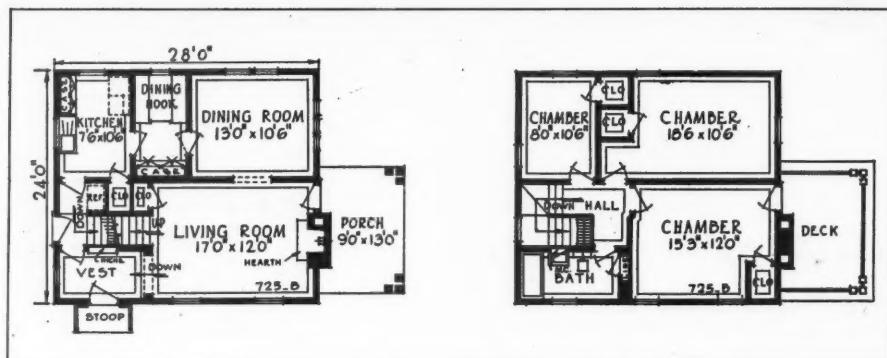
The Tucson, Arizona, Home of Mr. and Mrs. Bradford Duncan is a Perfect Modern Interpretation of the Spanish Style of the Southwest. The generous proportions of this structure are indicated by the floor plans to right. Compare the lines and layout of this larger home with those of the little Spanish bungalow, plan below and photo opposite.



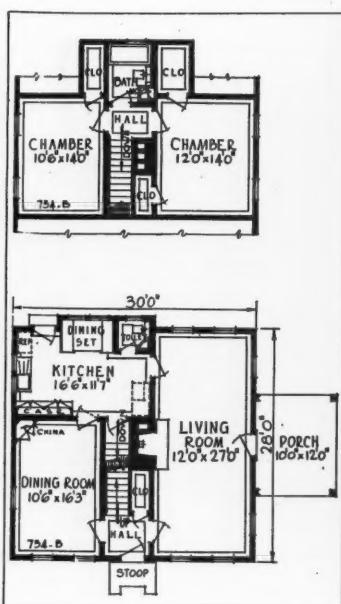


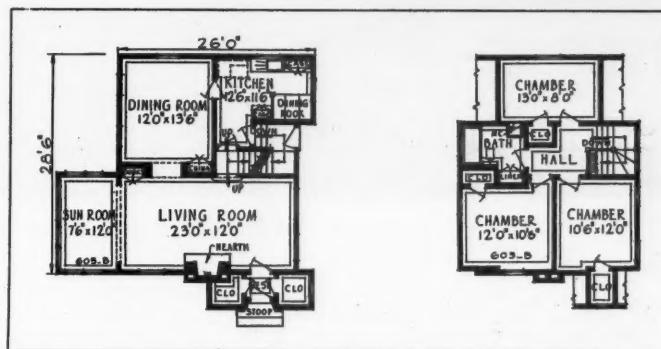
Two Early Americans

Above is a pleasing design developed along an early period style. The long windows with wrought iron railings and the effective entrance are exceedingly attractive. Below is revealed the charm of a Cape Cod home. Its delightful homelike quality, does not depend upon expensive material or elaborate details, but upon good proportions, and the use of a delightful entrance.

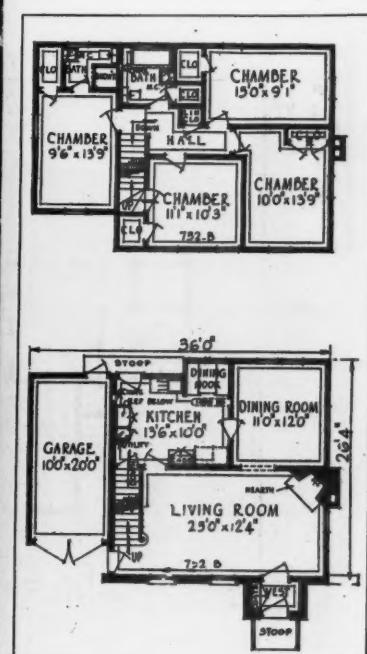


NATIONAL PLAN SERVICE Designs, Chicago





NATIONAL PLAN SERVICE Designs, Chicago



The People Want These

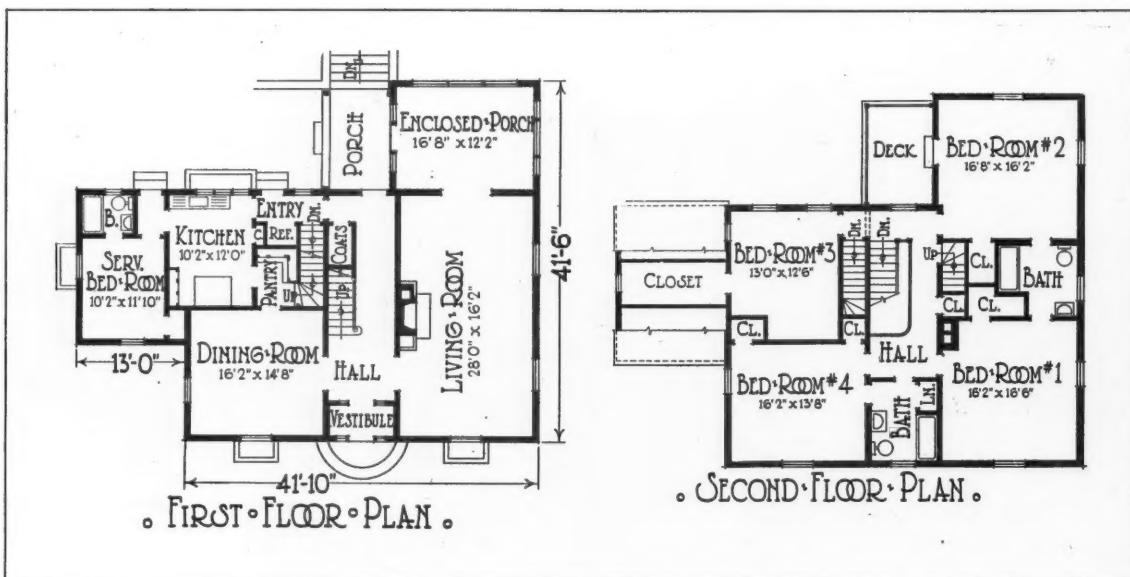
Above Is an English Design—Graceful Lines Combined with the Effective Front Chimney, Make This Home One of Artistic Beauty, and the Interior Arrangement Provides Everything in Convenience and Comfort. In this design below the many advantages of the early Colonial style are set forth. The attached garage is convenient and practical; the use of brick is effective.

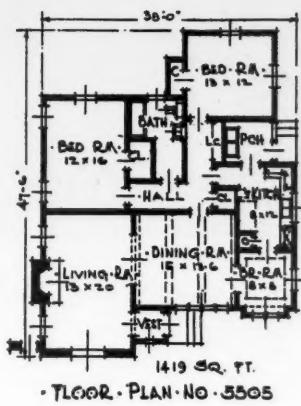


ARTHUR T. REMICK, Architect and Builder

With Out-Jutting Second Story

A Famous Old Style, Popular with the Early Settlers, and Still Good Today, Is Illustrated—Built Recently at Montclair, N. J. Brick is gracefully combined with wide siding.



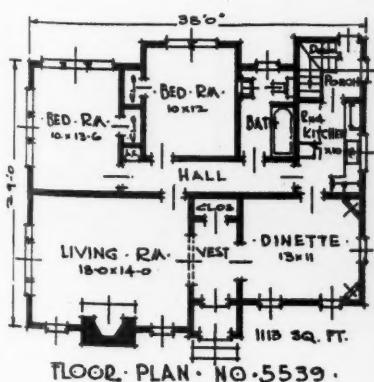


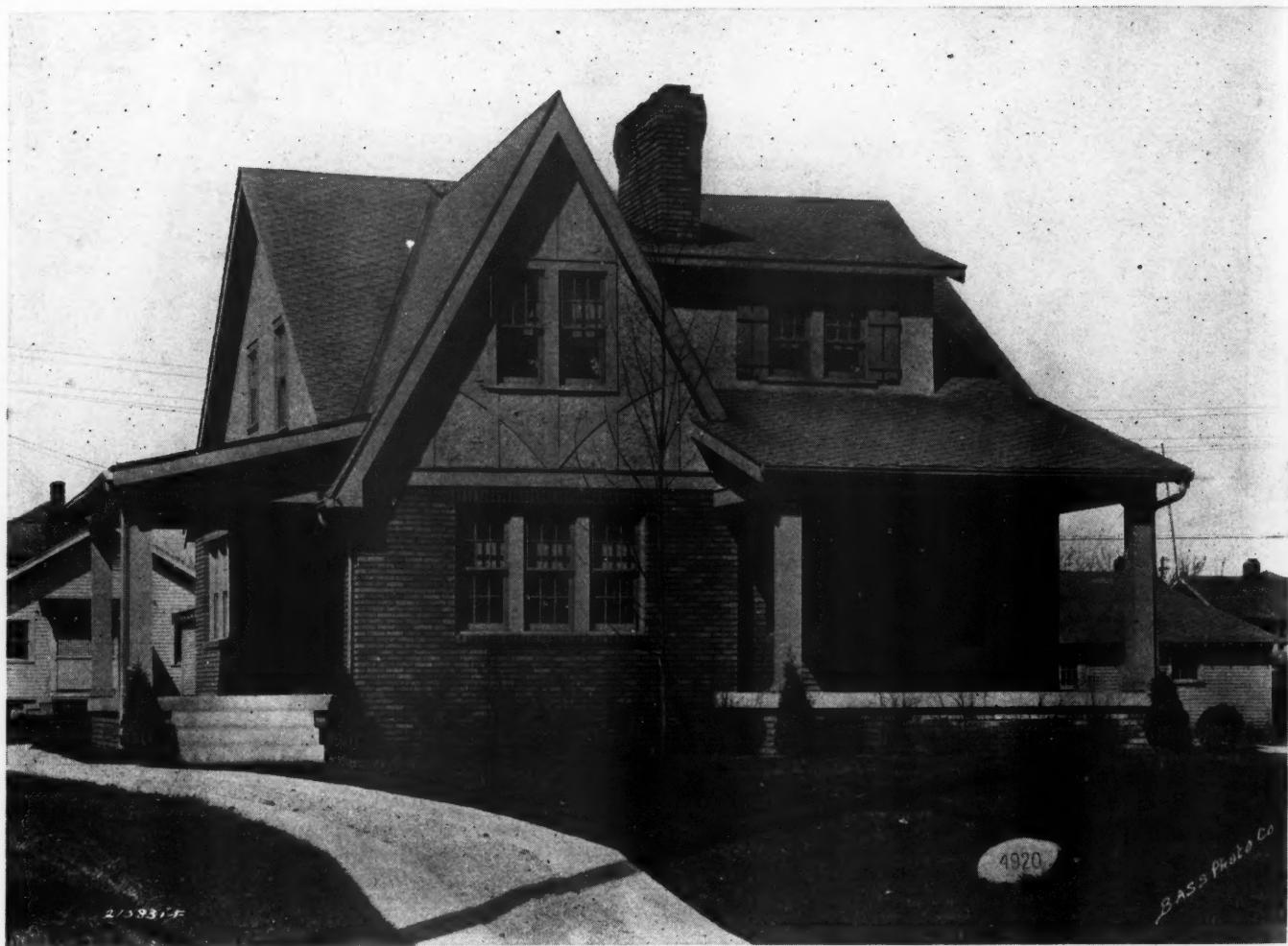
As They Build in California

Great Architectural Vigor Has Found Expression on the Pacific Coast. Here are two lovely examples. Above is an exclusive English design, with half timbering in gables and adzed timbers over the windows. The hand-split shales on the roof are in keeping with the design. The floor plan is one of unusual arrangement with cross bedroom ventilation.

Designs for Small Homes Come and Go, But the Style of the Frame Cottage Shown Below Will Always Be in Good Taste.

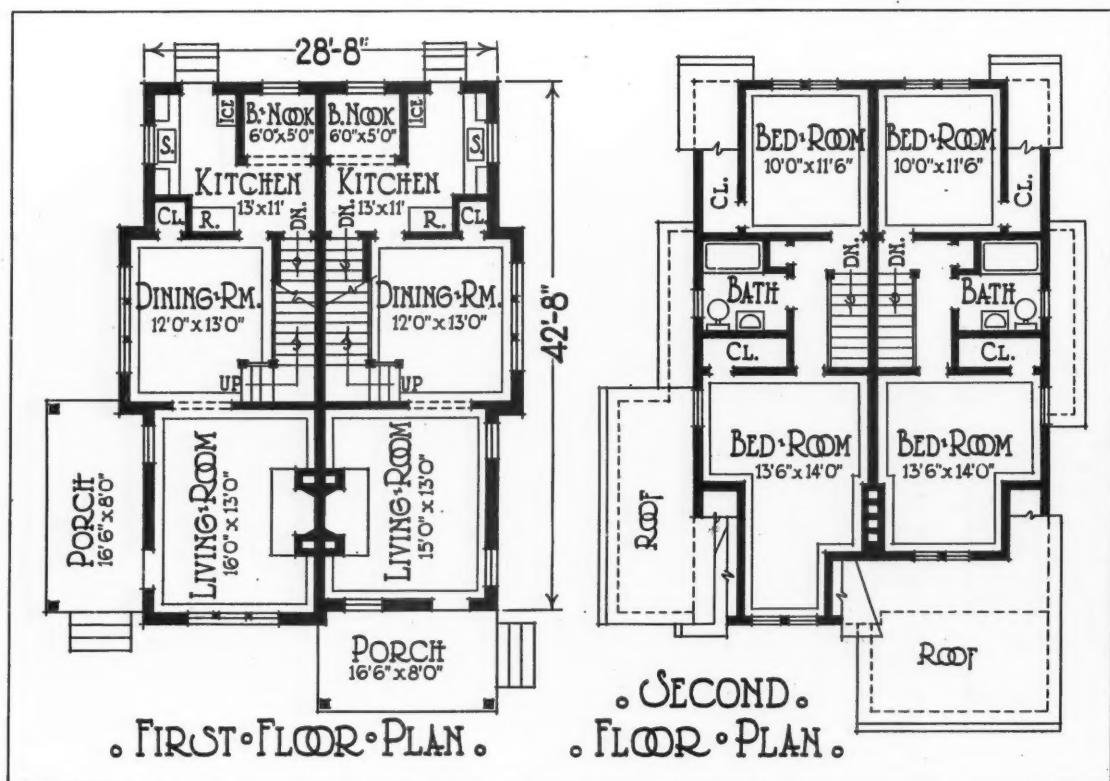
A. B. CLEVELAND Designs, Los Angeles





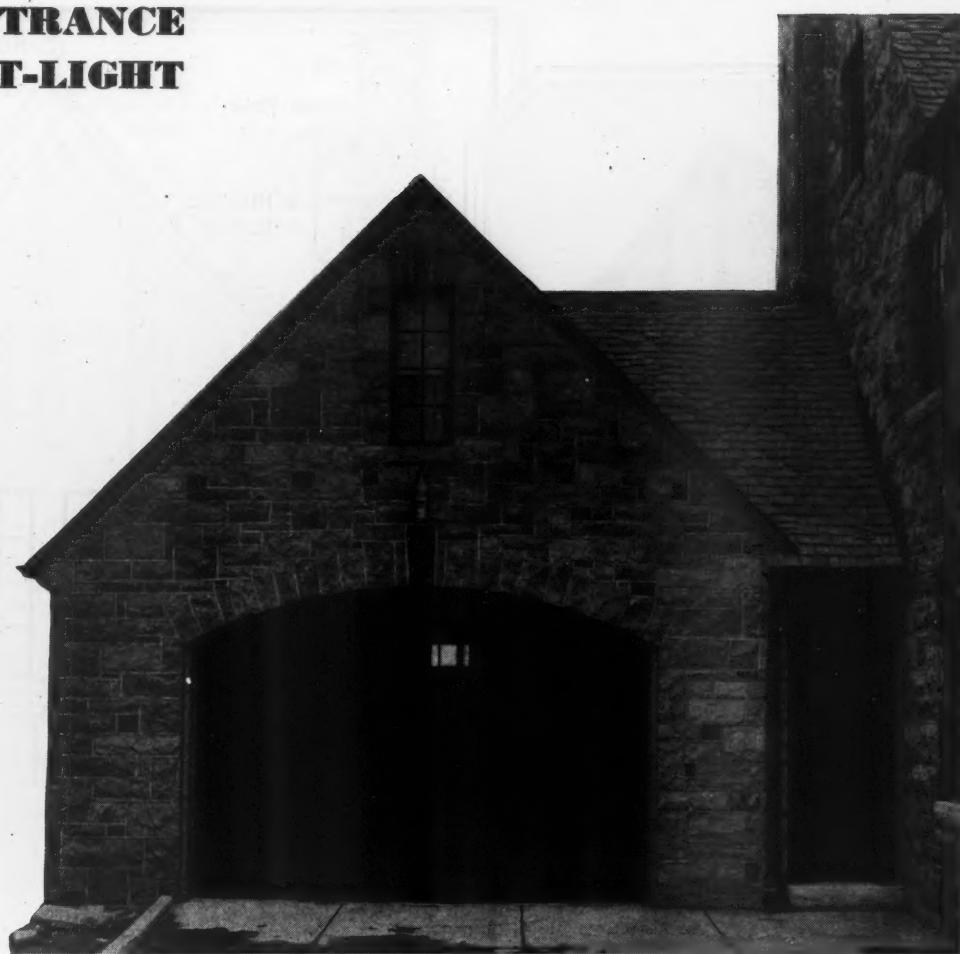
Unusual Double House Design

Designed by R. W. Miller, Architect, Indianapolis and Built by Bridges & Graves Co. It is an excellent two-family design for a lot as narrow as 40 feet. Each family has its own separate entrance.



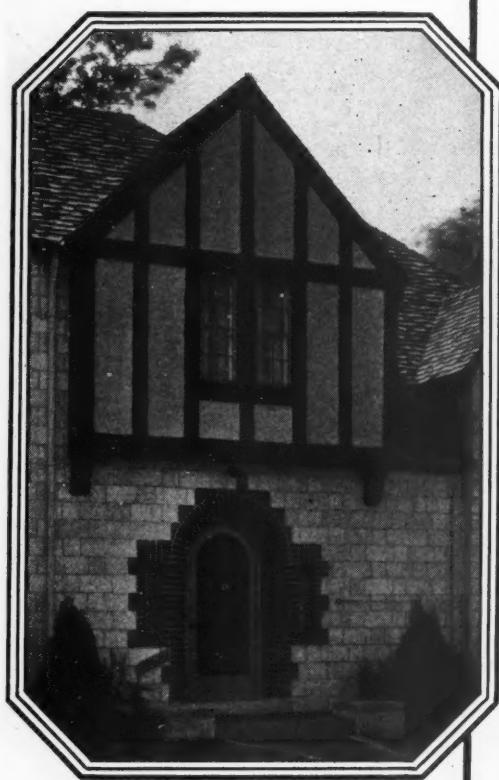
THE MOTOR ENTRANCE IS IN THE SPOT-LIGHT

Garage Doors Characterful in Design and Sturdy in Construction, Yet Easy to Operate, Are Called for When the Garage is Made a Part of the House and Given the Prominent Street Frontage, as is Now so Often Done in the Better Homes.

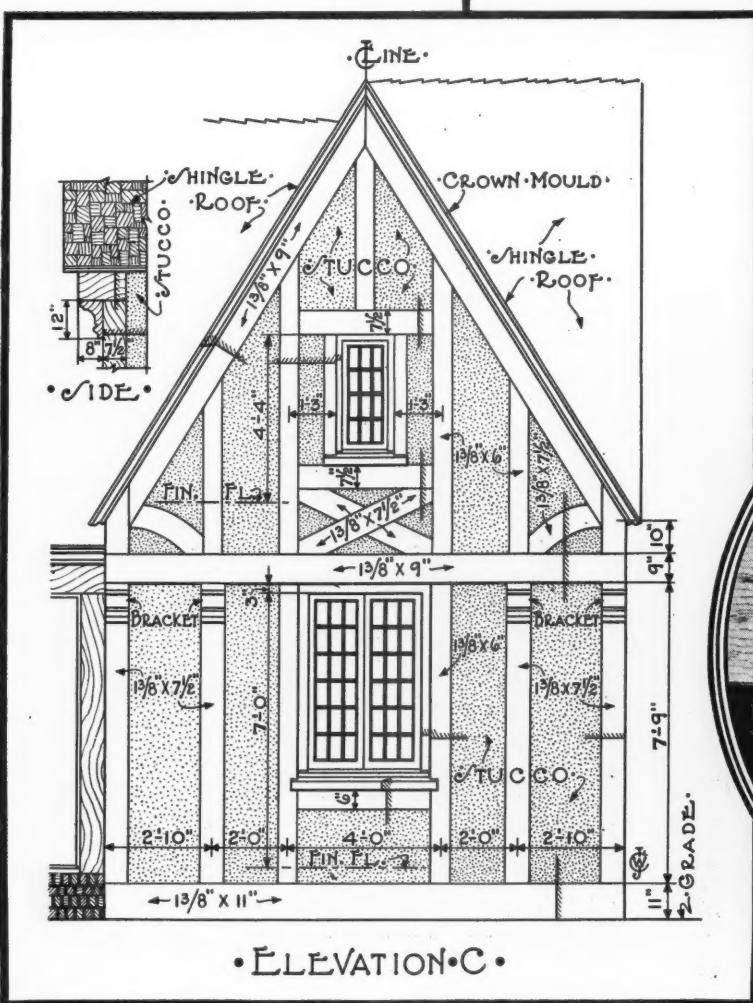
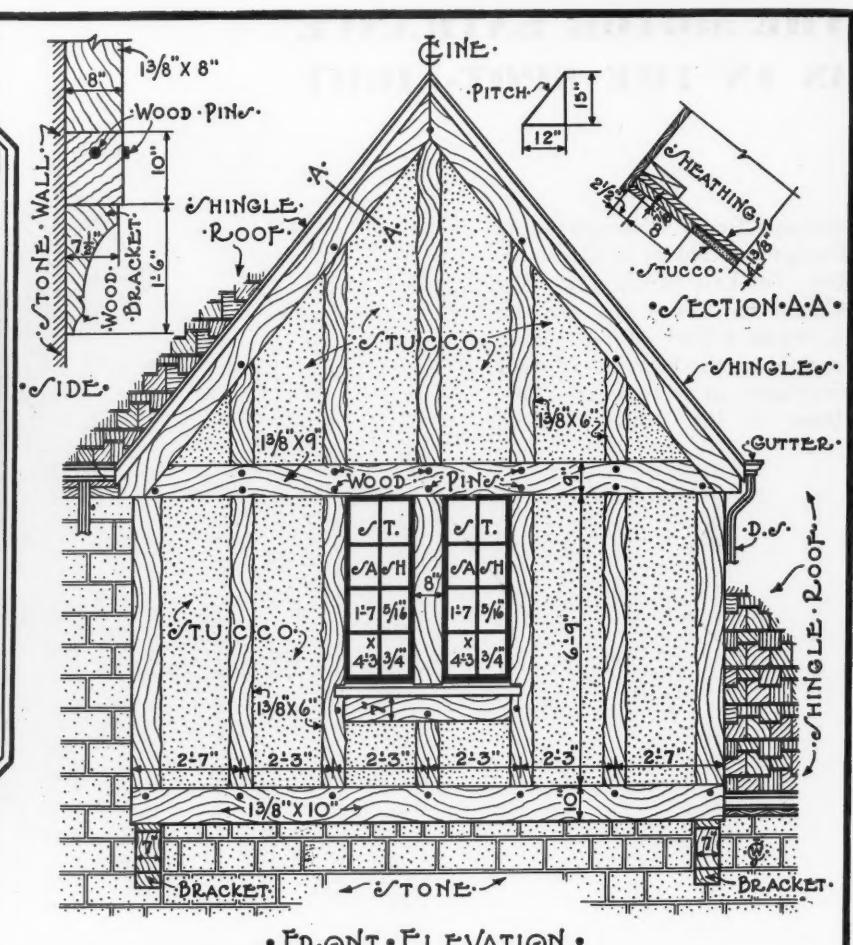


Architects Are Showing Much Originality in Their Handling of the Attached Garage Problem. Builders can obtain many good suggestions from the manufacturers of door operating equipment. These examples illustrated are of the popular upward acting type and are illustrated here through the courtesy of the Overhead Door Corp.



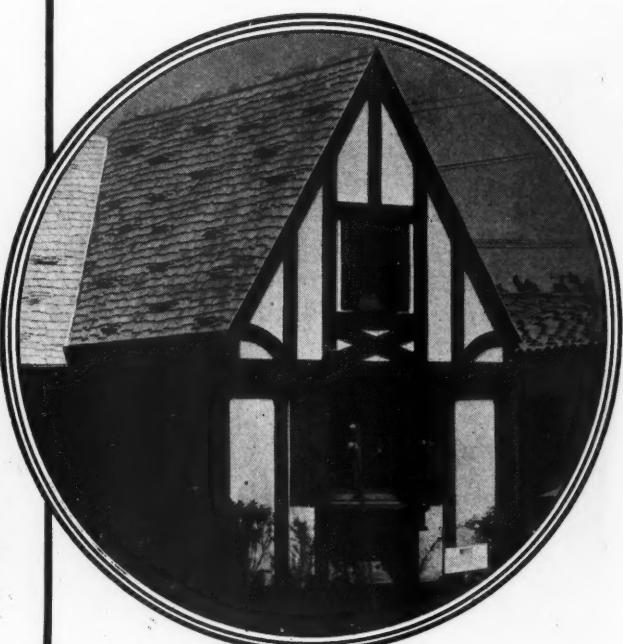


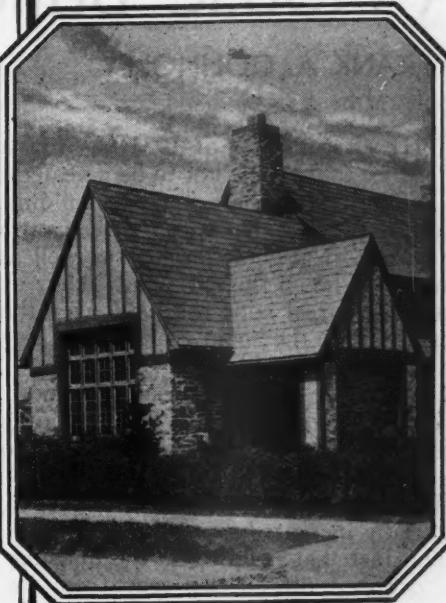
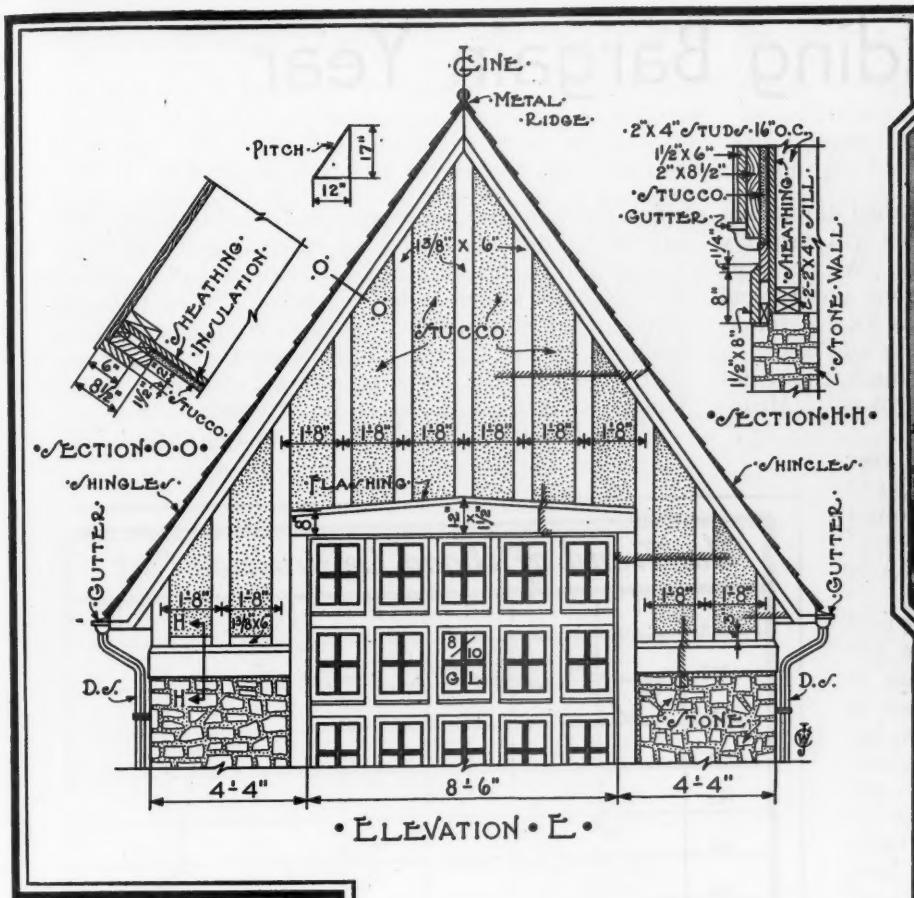
Chicago Use of Stone and Stucco.



Measured Details of a Good House

Los Angeles Contributes This Graceful Bit.

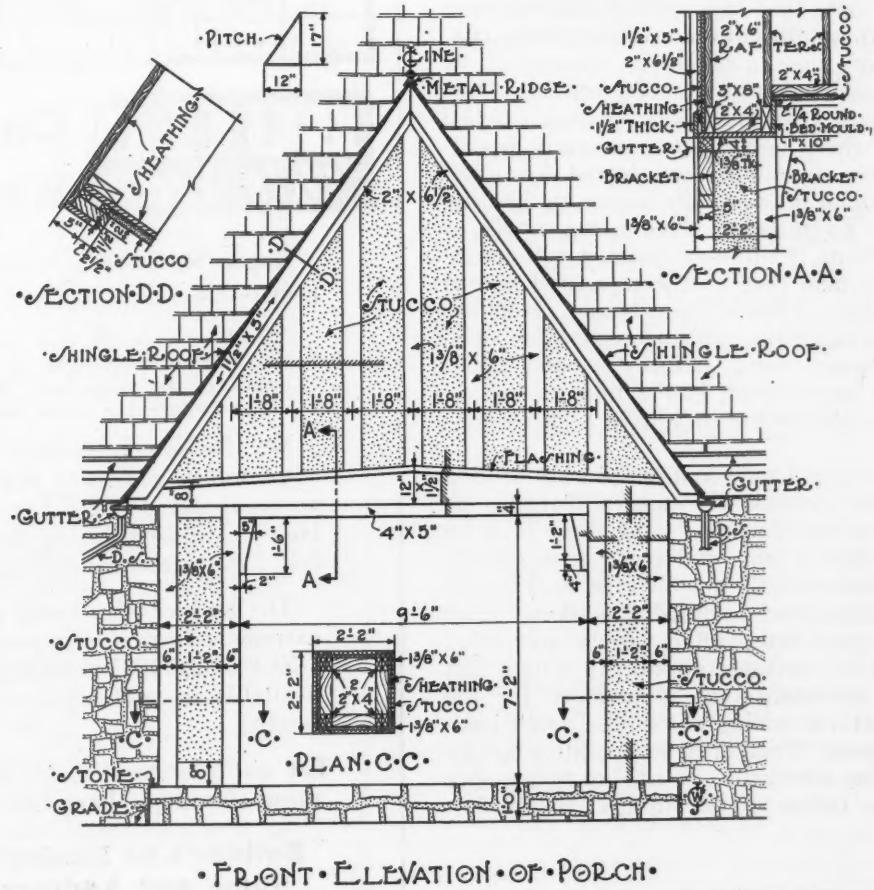




A Charming Detail from Cincinnati

Half-Timbered Construction

How English Half-Timber Panel Work is Executed in Chicago, Los Angeles and Cincinnati.



A House Building Bargain Year

By FRANK A. CONNOLY

THE first quarter of 1931 has furnished ample evidence that this is not to be a year that will normally offer great profits in housebuilding. We are now awake to the fact that better times were not just around the corner. National statistics as well as local observations have shown this all along. They are now showing that there is real hope for 1932, even though it may not measure up to the boom years of the recent past. Meanwhile, what of 1931?

This can be made a reasonably good year for dwelling construction. There continues to exist a market for a given number of houses well built and offering substantial "buys" within their price range. This market can be materially increased.

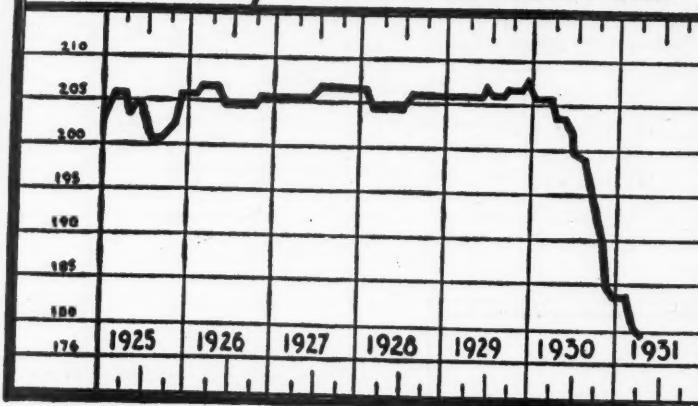
The fact that building in the housing field has dropped off 50 per cent from its five year average is superfluous information to the man who can look about him and see in local conditions a new demand gradually, but surely, catching up with the former over-built situation,—the man who realizes that two million young couples have married since the stock market bubble burst on "Black Thursday," October, 1929; that new families have come into the community; that old houses are wearing out; that two million children have been born, adding to the crowded living conditions of those dwelling in apartments or making their homes with older couples. During the past year-and-a-half we have reached a level where house construction in practically every community has slowed down and fallen behind the normally increasing housing demand. Even though the existing supply, in most sections, is still inadequate, it will not indefinitely take care of the estimated annual requirement of 500,000 new homes. How are we going to get the public to realize that now, in the quiet days, before demand again becomes accentuated, is the time to buy or to put up that home they have been so anxious for.

There is and will continue during 1931 a reasonable demand for houses that can be considered good "buys" and there will be call for better built and more economically built houses than those which the market now offers. Like other commodity markets, housing this year must offer variety and other elements of consumer appeal. It is here that 1931 is affording real opportunity for the builder who is willing to exercise smart business acumen. Whether he be operative builder or building contractor, he has got to convince the other fellow of two things. In the first

place, the man with the reputation for being a competent, careful builder who gives full value is going to have a strong lead in this year when demand is dull and people feel they can afford to be "choosy." So he must first convince the other fellow that he is a careful, competent builder. In the second place material prices are such that they offer the other fellow real bargains, and the builder has got to call this to his attention.

Home Builders' Bargain Year is an appropriate slogan

The Trend of Wood Construction Cost



BUILD Costs Are At this Year Rock Bottom !

Roger W. Babson, World famed economist, recently said:

"Reduction in the cost of building Materials has brought them down, on an average, to where they were fifteen years ago, thus affording favorable opportunities for home builders."

Mr. Babson is correct . . . but the favorable opportunity may not last long . . . already the accumulated demand for housing caused by the lack of building during the last few years is being felt . . . prices are stiffening.

The builder who would make use of the present extremely favorable opportunity should do so AT ONCE. In 1931 building savings of 20% are available to anybody . . . next year will be different.

Let us help you make the most of today's bargains.

Builder's or Dealer's Name and Address



One of the Newspaper Ads of the Lumber Manufacturers' Campaign Featuring Present Low Costs. Builders and dealers should run this series in their local papers.

for 1931. It has been fifteen years since you have been able to put as good material and as competent workmanship into a house for the money. In addition, you can actually install all modern conveniences in a house today and offer it to the ultimate occupant at the same price at which a similar, less carefully built "stripped" house could have been offered a year and a half ago. This means you can install mechanical refrigeration, washing and laundry machinery, automatic water heaters, the best makes of plumbing and heating equipment and a number of other sales compelling items, and still turn the house over at the figure it would have commanded in 1928 or 1929. Or, you can select quality material and put careful, skilled mechanics on the job, and turn the house over at 20 per cent less than two years ago. All because material prices are lower.

Here is an appeal that ought not to be lost. You know

you can do it. Why not tell it to the man who can use your services in such a situation and profit himself thereby. If he is not the ultimate occupant, he can use the information in dealing with the ultimate power, or you can get him to pass the information on. Price-cutting to get business is bad business, but with prices at pre-war levels, calling attention to that impressive fact is good business.

One of the materials industries, the lumber industry, has seized on these facts and is broadcasting them to the public as a means of stimulating new business. It has prepared campaign literature and advertising copy for the use of local retailers. The slogan is: "1931—The Home Builders' Bargain Year." The whole building industry ought to strike a similar note and add its efforts toward making this a representative housebuilding year. What the lumber group have done can be done by every person interested in building and building materials. The bargains offered are so indisputable that there is bound to result a certain amount of increased business coming from those who want better homes at the same money or good homes at less money. There are many who have the money to spend for such purposes, if they can only be convinced that this is the most appropriate time. The resultant improvement in the home building field will tide things over until the better times around the corner put in their appearance. This seems to be the year when the building industry, with the price argument in its favor, has a real chance to get its share of the consumer's dollar.

The campaign developed by the National Lumber Manufacturers Association emphasizes facts. It calls attention to statements by such leading economists as Roger Babson and by estimators for large federal projects, showing that they consider this the best bargain year in more than a decade. It makes convincing comparisons taken directly from dealers' books. Here are some of the challenging comparisons:

Lumber is lowest in price since 1918
Flooring is lowest in price since 1925
Plumbing is lowest in price since 1917
Heating is lowest in price since 1921
Hardware is lowest in price since 1914
Paint is lowest in price since 1917
Glass is lowest in price since 1916

The prepared advertising emphasizes the enlarged value of the homebuilding dollar and points out that the prospective owner can save 20 per cent off the price prevailing in 1929. It reminds the public what this 20 per cent means in interest carrying charges over a period of years and points out that the money thus saved can either be used for other purposes such as buying a car or paying debts or for putting into the house conveniences and labor-saving appliances which the family might not otherwise be able to afford. It makes a strong appeal to those who wish to conserve their resources or who

(Continued to page 112)



**... If YOU
Have Ever
Planned
To Build
A Home..**

If you have been planning to build a home and waited . . . you are wise . . . this year the home can be built for 20% less than at any time during the last fifteen years.

Building costs have reached their low . . . savings of \$1000 to \$1500 are common on houses in the most moderate price class. A house that cost \$6500 as late as 1928 can now be reproduced exactly for \$5000.

This condition cannot last long. Prices already are beginning to work upward . . . right now is the "Spot time" to build a good house at low cost . . . don't let it slip away. Phone us right now. We will do the rest.

**Builder's or Dealer's
Name and Address**

**HOME
BUILDER'S
1931
BARGAIN
YEAR**

Builders and Dealers Can Promote a Lot of Local Home Building by Using This Slogan and the Popular Appeal of This Series. Write for complete set of proofs.

WHAT IS GOOD

“**O**F course we believe in good architecture,” is a statement that has been made so frequently it ought to be framed and hung up on the wall. It is said by Beaux Arts architects who have made a life study of the subject. It is said by carpenter-builders who never saw a T-square or a book on Fundamentals of Design. It appears all too frequently in the pages of architectural and building magazines.

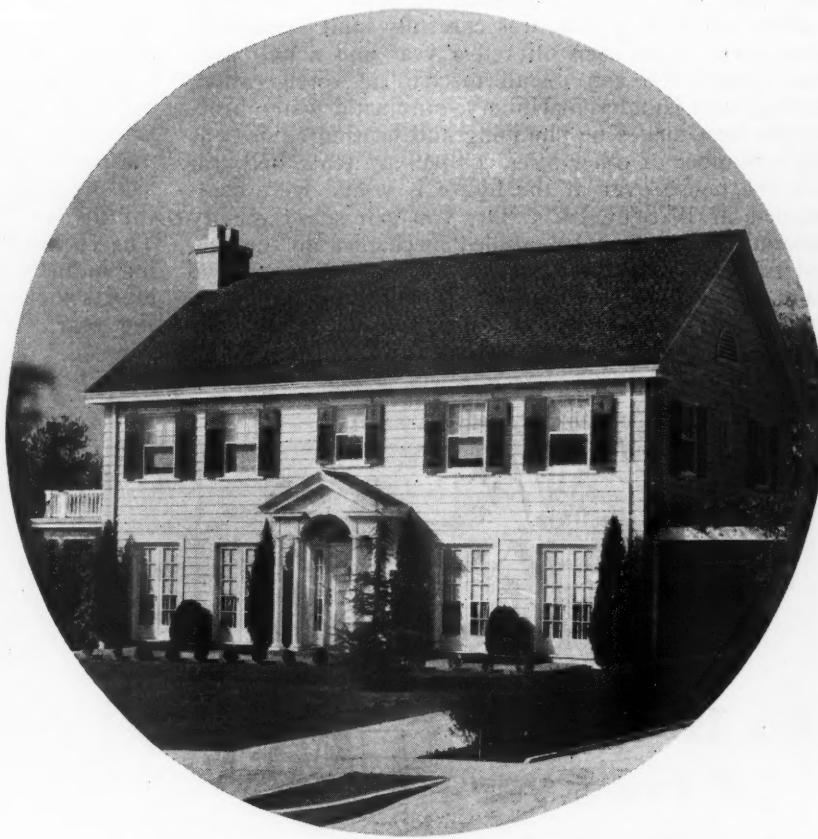
But the question is, *what does it mean?* There's the rub! What is good architecture to some of us is an abomination to others. What one builder may think is a “swell little house” may seem like a mistreated box-car to another, and even worse to a member of the A. I. A. One says a house is “inspired;” another says it is “God awful.” Builders, who most architects would have us believe aren't supposed to know very much about what's artistically right, often disagree violently about looks. Is there any wonder that they are inclined to adopt a practical method of settling the question—the sales chart? What sells best *is* best, they say.

Builders in general, and the merchant or speculative builder in particular, have been unfairly criticized for architectural forms that are not, strictly speaking, their fault. The real fault, if there is one, lies with the age in which we live.

Unfortunately, architecture differs from such arts as painting, sculpture, or music in that it is so closely bound up with and restricted by the everyday lives and living habits of plain people. When builders undertake the erection of a structure they cannot let their own ideas of beauty prevail; they are forced to adapt the structure to the needs and living requirements of the people who will occupy it.

Art versus practical use is an age-old controversy that is still going on in our modern building activity. Many architects and many builders make conscientious and sincere efforts to produce what they feel are beautiful structures, only to find that their idea of beauty is too far advanced or too restrained to catch the public eye. As a result they have found themselves forced to make houses, apartments, and business structures more truly an expression of the desires of their customers.

How architectural concepts may overshoot the mark of mass appeal is illustrated by the following incident. I persuaded the editor of an important architectural journal to go through a large catalog of popular home designs with me. I asked this man—an architect well qualified to pass intelligent criticism—to select the half dozen “best designs” from the several hundred in the book. This he did. The following day I asked an official of the publishers to look up the “sales record” of each house—that is, the number of sets of stock plans for it that had been sold. To my surprise I found that the six “best designs” from the point of architecture were just about the six worst designs from a sales viewpoint. In other words, my architect friend had a concept of archi-



DO YOU LIKE THIS PRIZE-WINNER?

ecture that, while undoubtedly of great beauty, was beyond the average taste of the public.

Builders should be leaders in developing good design, but they must be cautious not to advance too far ahead of public taste if they are to be successful in business.

Another point that is frequently not considered by critics of the building industry is that the style of architecture must be adjusted to suit the tastes of the type of customer served. People who are fond of the gaudy colors and bright displays of this jazz age will not buy or live in houses of restrained, quiet design. Sad as it may seem from an artistic viewpoint, it is a fact that the “jazz architecture” of some speculative builders is a true expression of the tastes, the culture, the needs of the class of people who live in them.

Perhaps the solution of America's architectural problems will be found by adoption of a newer and more modern concept of the purpose of buildings; that the style of the structure should emerge out of the purpose to which it is to be put and the modern materials from which it is to be built. In other words, the homes, apartments, and business structures of the future will not try to copy designs of the past, but will express the requirements, needs, and materials of the present.

As soon as the public taste has grown to accept this viewpoint, builders will no longer worry whether a structure is Renaissance, Victorian, or some other period, but will merely have to answer the question, “Will this building naturally grow out of the requirements of the user and the materials at our disposal?” Such a tendency is already very manifest. Public buildings, especially the

ARCHITECTURE?

By J. B. MASON



OR DO YOU PREFER THIS BEST-SELLER?

skyscraper, are more and more tending to be independent expressions, rather than copies. Houses are following suit. The way has been paved by modernists whom not long ago many people were calling "radicals." Architect Frank Lloyd Wright, for example, more than a generation ago started designing houses that hugged the earth, let in sunlight, and centered about the comfort of the hearth. He eliminated attics, bay windows, cellars, corner towers, and scroll work, and made his interiors airy and spacious and proportioned to the people who were to inhabit them.

Raymond Hood, in his article in the April AMERICAN BUILDER AND BUILDING AGE, brilliantly outlined his philosophy of the development of modern homes. In his discussion he says:

"In planning a house the looks of the exterior should not be considered until every requirement of the interior that will make for comfort and happiness has been solved. A good interior cannot be fitted into the set mold of a Colonial, an English, or an Italian house of a hundred years ago. . . . After all, a house is built to live in, rather than for neighbors and friends to look at. This does not mean that the house will not be beautiful. To the contrary, a house, designed and built as I have outlined, will acquire a new beauty, a beauty of its own, just as the automobile acquired its beauty once it threw away the precedent of the coach and wagon. Why should a modern house look like the old Colonial house of grandfather's day? He could not have had the kind of house that the twentieth century carpenter, brick layer, and mechanic can so easily produce. Windows alone alter the whole appearance. In the comfortably heated house they can be wide and high, to give a view and let in the sun. Our methods of construction make it a simple matter to place the

windows exactly where we get the exposure and view we want. We are not bound by symmetry of construction or form to put them in a particular place, regardless as to whether they satisfy us or not."

Undoubtedly there is need for more attention to the problem of small house design by such men as Mr. Hood. He, like many another of the great architects of our time who are willing to break away from tradition to meet modern needs, finds greater profit in larger structures than in the small home. The architectural profession as a whole has not done its best by the small house. One outstanding reason is the attitude of the profession toward co-operation with builders. Because of this attitude, many brilliant young architects who by becoming members of a building firm could have improved the design of thousands of homes, benefitting both themselves and humanity, have instead remained in a small private practice where their talents have been limited to a very small field and their own opportunities curtailed.

The attitude of builders is rightly coming to be, "If they won't work with us, they'll work for us" in regard to architects. Instead of the fine co-operative spirit that might have been developed, we now see builders organizing their own architectural departments, adding to the

competition in an already overcrowded field. We believe, however, that the practice of architecture is a profession that reaches the greatest heights when maintained in an independent, enlightened manner. Just as we feel that dealers should not go into the contracting business, we hold that contractors should not go into the practice of architecture, if it can be avoided.

Briefly summarizing these impressions, it seems: (1) There is no final authority as to what is good architecture; (2) Wide variety of tastes require a wide variety of treatment; (3) The structure should reflect the culture and needs of the occupant; (4) There is a marked tendency away from period architecture; (5) More attention to the small home should be taken by leaders of the architectural profession; (6) The homes of the future will be functional in character, an expression of the needs of the occupant carried out in modern materials and in a modern fashion.

It takes many kinds of people to make a world, and likewise it takes many kinds of houses to satisfy the modern American public. The wide variety of types and styles of houses published in AMERICAN BUILDER AND BUILDING AGE is the result of a conscious effort to meet the divergent needs of its 100,000 readers operating in every state of the Union. On these pages are shown two houses that are widely different in their architectural treatment, each designed to meet successfully certain needs and certain requirements. If you are interested in recording your preference for one of these two types, or your taste in architecture as you would like to see it expressed in these pages, just drop a line to the Editor.

Questions of Law Clearly Answered

Legal Rulings of Interest to All Builders

By LESLIE CHILDS

AS a general proposition, a provision of a mechanics' lien law providing a certain time within which liens must be filed after completion of the work, or after the furnishing of the last labor or material, will mean just what it says. By the same token, the failure to comply with such a provision will usually result in the loss of the right to a lien.

Further, while the facts of a given case may alter the rule, the general rule holds that the doing of purely repair work, upon a job that was supposed to have been completed, will not extend the time for the filing of a lien. Here is a point that building contractors should never overlook. As an illustration of the possible danger in not having it in mind, the following case will serve.

Lien Law Allows Four Months For Filing

A contractor undertook to build a house for a lump sum, and the lien law of the state provided that contractors' liens should be filed within four months, "after the date upon which material was last furnished or labor last performed under the contract."

The contractor completed the house on August 10, at which time it was accepted by the owner, and was, at this time or soon after, paid the contract price excepting a balance due of \$776. The contractor it appears, had in mind the provisions of the mechanics' lien law, which required that liens be filed within four months after completion of work, but since he expected payment of the balance due within a short time saw no reason for filing a lien.

The matter drifted along until October 11, when plaintiff was informed that the roof of the house leaked in spots, and he was requested to repair it. The contractor sent his men and they repaired the leaks by spotting with asphalt paint. This labor and material was furnished on October 22 and 23.

After doing this work, the contractor concluded that the time for filing a lien would be dated from that time, so he thought he had four months more in which to file, if that became necessary. He took no steps to file a lien. About the first of January of the following year, he learned that the owner had sold the house to third parties free from liens.

The contractor then filed his lien on January 15, for the balance that remained due him. The new owners, defendants in this case, contended the lien was invalid because not filed within four months after the completion of the house on August 10. The contractor, as plaintiff, then filed suit to foreclose his lien, and the question of whether or not it had been filed in time was squarely raised.

The trial court held that the lien was invalid, because not filed in time; that the repairs to the roof made by plaintiff in October were not a part of the original contract, but merely the making good of work that was defective when completed; that the original contract was completed on August 10; and that the date for the filing of the lien started from that time, and not from the dates in October when the repairs to the roof were made. From this judgment, the plaintiff appealed, and

the higher court in passing upon the question raised, and in affirming the judgment, said in part:

Contractor Denied Lien

"The very nature of the statutes render it necessary in many cases *** to resort to judicial interpretation of the terms 'last labor performed or last material furnished under the contract' to ascertain the commencement of the statutory period of time in which a lien claim may be filed. In this connection the courts have universally held that when the contract is regarded as completed, *** the last material furnished and the last labor performed *** so as to start the running of the statutory period for filing of the lien claim, refers to the actual delivery of material furnished and, in the case of labor, to the performance of labor, on or prior to the completion of the building. *** There are exceptions to the above rule ***."

"The testimony showed, or reasonably clearly showed, that the plaintiff ceased to furnish material and ceased to perform labor on this building on or about August 10; that, except as to final settlement between the plaintiff and the other contracting parties, the contract had been fully performed. The evidence clearly shows that the furnishing of this asphalt paint and the labor to spread it around on certain leaky portion of the roof involved simply work of repair and not work of construction. ***"

"After the completion of the building, if plaintiff could return two months thereafter and make some repairs due to faulty workmanship or faulty material and thereby start anew the statutory period for filing lien claims involving the work of construction, then there would be no good reason to deny him that right, had he waited two years after the substantial completion of the building, instead of two months. ***"

"It is clear that the present case does not fall within any of the exceptions to the rule that the doing of work, and not its acceptance, marks the completion of the contract. For the reasons herein stated, the judgment of the trial court is hereby affirmed". (291 P. 332)

Conclusion

The foregoing case constitutes a striking illustration of the possible danger to a contractor in taking any chances on the proper time to file a lien. Of course, since each case of this kind must necessarily be decided in the light of its facts, and the terms of the lien law involved, the subject cannot be covered by the statement of any hard and fast rule.

The holding in the case reviewed, however, is in accord with the great weight of authority that the doing of purely repair work, especially after a building has been accepted, will not extend the time for the filing of a lien from that date. And, though there are exceptions to this rule, a contractor should never rely upon them in filing a lien, unless he is absolutely certain of his ground. Here is a case of "better be safe than sorry," and if a contractor contemplates filing a lien prudence would seem to dictate that it be filed at a time so clearly within the statute as not to be open to dispute.



Apartment
at 16,000 South Morland Blvd.
Shaker Heights, Ohio

•••

Alfred W. Harris, Architect
A. W. Pahner Co., Gen. Contr.

•••

APARTMENTS

Every Apartment Builder Will Be Affected by the

NEW DEVELOPMENTS

In the

Will new methods of construction and the utilization of new materials alter present conditions in apartment construction? Read Mr. Framhein's ideas here given in the form of excerpts from his address at the convention of the National Association of Real Estate Boards in Baltimore.

It behooves the co-operative apartment developer today to meet the economy of space in his building with no loss of efficiency. Buildings will have to be carefully classified with respect to class of occupancy desired. The planners and designers of buildings must arrange for each class a definite proportion of usable space to be incorporated in each development. Designers of moderate priced buildings must have just enough space in each room to make for practical and comfortable living with no lack of light and ventilation. The strictest of economy must be observed in this type of building and there must necessarily be a very small percentage (the least possible) of unusable space. There has always been a need for this type of development and by availing ourselves of the experiences of the past few years, we can, through intelligent adherence to the above principles even in this market, create a definite demand for our commodity. The co-operative idea savors of thrift and the principles set down here should definitely stimulate to action the buying motives of the well-grounded American family.

Keeping in mind the same trend of thought, except for smaller cities and isolated locations, the ordinary construction, walk-up type of building is definitely on the decline. This is due primarily to modern methods in construction which are continually narrowing the margin of cost between ordinary type of construction and the fire-proof type of building. The fire-proof type of building offers not only every advantage of the ordinary construction building but in addition offers a durability, a safety factor and a decreased operating cost which fits in grandly with the present scheme of things.

Improved Methods Cut Costs

Fortunately our construction engineers throughout the country during this period of inactivity have had time to develop improved methods of designing and construction which will greatly reduce the cost of our buildings in the future. During the last two years, many synthetic materials have been developed and many more are just on the eve of reaching the market which will not only reduce the cost of fire-proof construction but offer a substitute for materials which have been in common use for many years; substitutes which are not only more lasting, enduring more wear and tear, but reducing the upkeep to a degree which is astounding to the ordinary layman.

We have touched briefly on the class of development I am pleased to term popular. There are many classifications of buildings between this class and the type of

Co-operative Apartment Field

here discussed by

SCHILLER W. FRAMHEIN

Manager Co-operative Apartment Department

McKey & Poague, Inc.,
Chicago, Ill.

building desired by the so-called elite. Particularly in the larger cities there is a class of people who will buy in a co-operative venture only through one appeal. We must satisfy their desire to have and to occupy an apartment with many exclusive features located in a building to which there can be drawn no direct comparison.

These buildings naturally call for a certain amount of extravagance as to location, size or rooms, personal equipment of the apartment and general equipment of the building as a whole. The vanity and the exclusiveness of such a structure will always have its appeal to those who can afford to pay for them. Among these we will include spacious studio type apartments with washed air ventilating system and elaborately furnished bathroom with onyx fixtures and gold leaf decorated walls, where stools and tubs as well as showers are contained in separate compartments.

Buyers More Discriminating

Even in this type of building and with the class of purchaser who must be contacted, the past years have had their effect. The purchaser of this type of building will certainly demand the finest, something a little better than anyone else has and still, for sometime to come, it is my prophecy that these buyers will be extremely analytical and critical as to costs and as to grade of construction. In other words, I believe for some time to come that we are to meet in our daily vocation, deep thinking, intelligent, trained buyers.

Experience has taught those who thought they had an inexhaustible supply of money that the supply is quite limited. The days of careless "whoopee" methods of buying have gone, at least for the time being, and if we are to succeed in this business or any other line of endeavor, whether we are operating in the co-operative apartment field, supplying the needs for the tenement dweller or the capitalist class of our cities, we must follow certain definite economic principles. A man today buys a Ford or Chevrolet, whichever one he chooses, because he believes from his knowledge and his analysis that the car of his choice offers the greatest value for the dollar he spends. This is quite true of the man who buys the more expensive car and who may or may not in the comparison of the two grades put a greater appreciation in his sense of ownership, but you may rest assured that in any case the purchasing power of the legal tender will be very carefully weighed.

As we all know, there has been a decided change in
(Continued to page 57)



The Leeb-Tyroler Apartments, 16000 South Morland Blvd., Shaker Heights, Ohio, Showing Progress of Construction on May 12, 1931.

Clever Planning Cuts Costs of High Quality Apartments

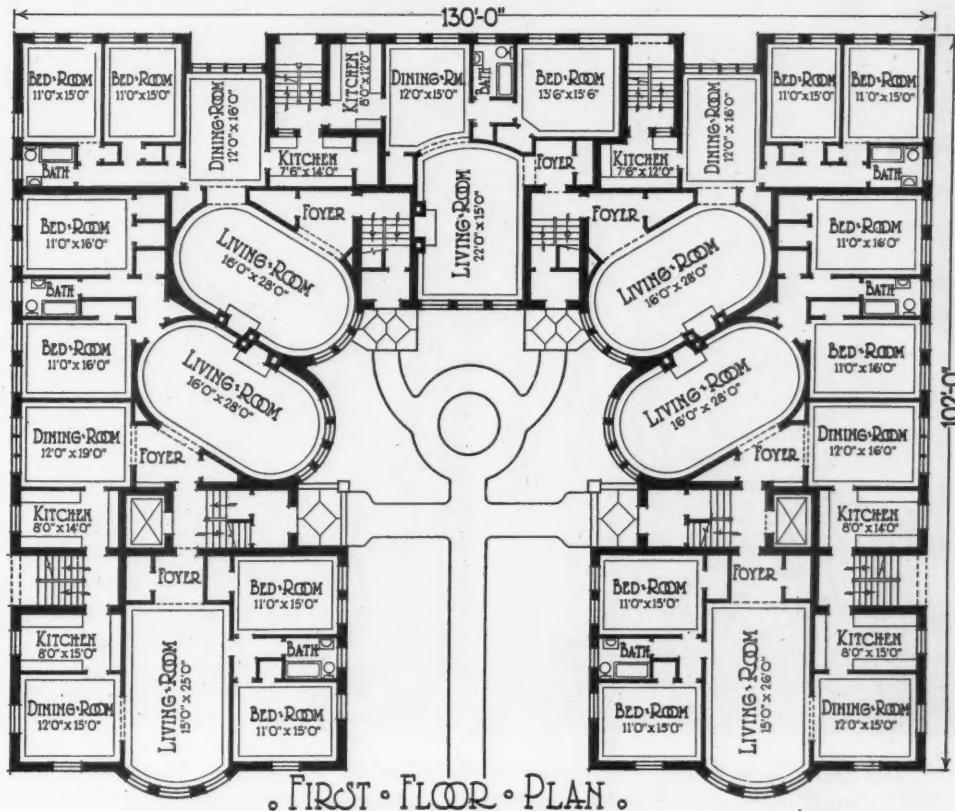
Architect Alfred W. Harris of Cleveland Takes Advantage of Reduced Prices and Advanced Practice to Create an Exceptional Apartment Building

SHAKER HEIGHTS, the fashionable Cleveland suburb which has on several occasions demonstrated how quality home building can be successfully done, has this spring staged another demonstration, this time in the field of apartment house construction.

Standing on a prominent site, the Leeb-Tyroler apartments which were started in the early spring have just been completed at a total cost of only 37 cents per cubic foot, for the highest grade fireproof construction.

The building itself and the layout of the individual apartments have been so skillfully designed that a rental of \$30.00 per room per month is assured. The total yearly rental income is estimated at \$53,000 for a building of total cost approximately \$250,000—which means a return of better than 21 per cent.

The general contract for this structure was awarded to the A. W. Pahner Company, with the Epstein Construction Company handling the carpentry, the W. W. Ballan-



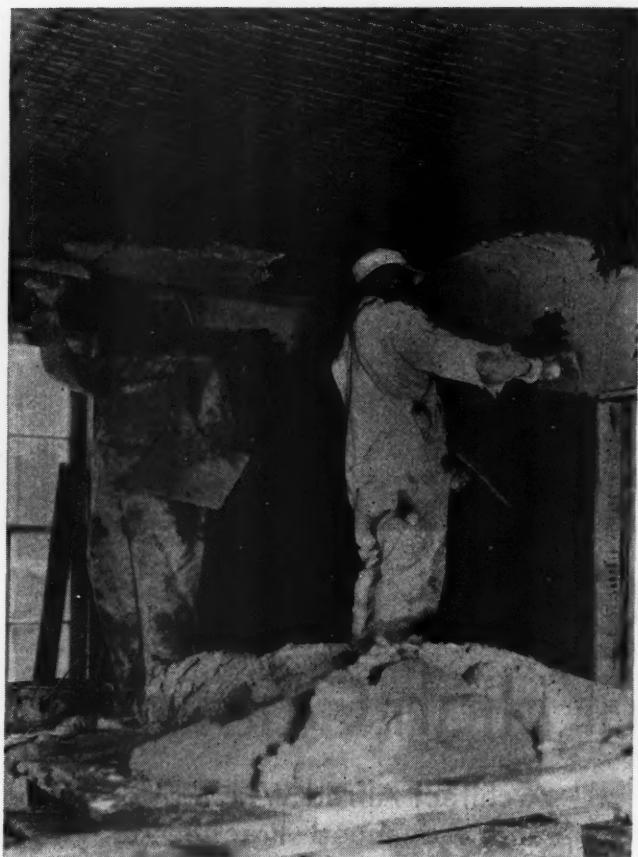
The Large Elliptical Living Rooms Are Among the Outstanding Features of the Plan. Each unit contains five rooms and enjoys through ventilation.

tine Company the cut stone, the Spohn Heating and Ventilating Company the plumbing and heating, Charles Silver the plastering contract, and the Donley Brothers Company the lathing contract. Major Alfred W. Harris of Cleveland was the architect and personally supervised the construction.

A study of the accompanying floor plan will show several unique features and refinements in the arrangement of this group of five-room apartments. Every unit has an unobstructed street view and every unit is arranged for through ventilation and an abundance of outside light. On the third floor, the apartments are duplexes with high ceilinged living rooms and ornamental staircases going up to the fourth floor rooms.

The construction of the building is face brick with Bedford stone trim, slate roof, and floors of concrete over metal lath supported by bar joists. Throughout the building, Steeltex sheets were used as the plaster base for side walls and ceilings, and the ease with which this material is worked to the curving contour of the ceilings contributed much to the low cost achieved. Concealed radiation of the cabinet type is built into the walls. Elevator service is provided from basement to fourth floor, by means of automatic electric elevators. Other special equipment includes incinerators with disposal door for each apartment and electric kitchen ranges. There is a large garage space in the basement.

The entire building is of a construction and finish which is ordinarily estimated at 75 cents per cubic foot. The lower costs of building materials, the increased efficiency on the part of labor, and the improved materials and appliances now available to cut costs have been combined with good architecture in this building to produce an exceptional result and one worthy the careful study of other builders.



Plasterers Applying Rough Coat to Steel and Paper Fabric Plaster Base.



The Third Floor Living Rooms of the Leeb-Tyroler Apartments Have High Vaulted Ceilings. Photo shows simple method of attaching metal fabric plaster base to attachment bars to provide curved surface.



All Floors Are of Concrete and Metal Lath Construction Supported by Bar Joists.

New Developments in Apartments

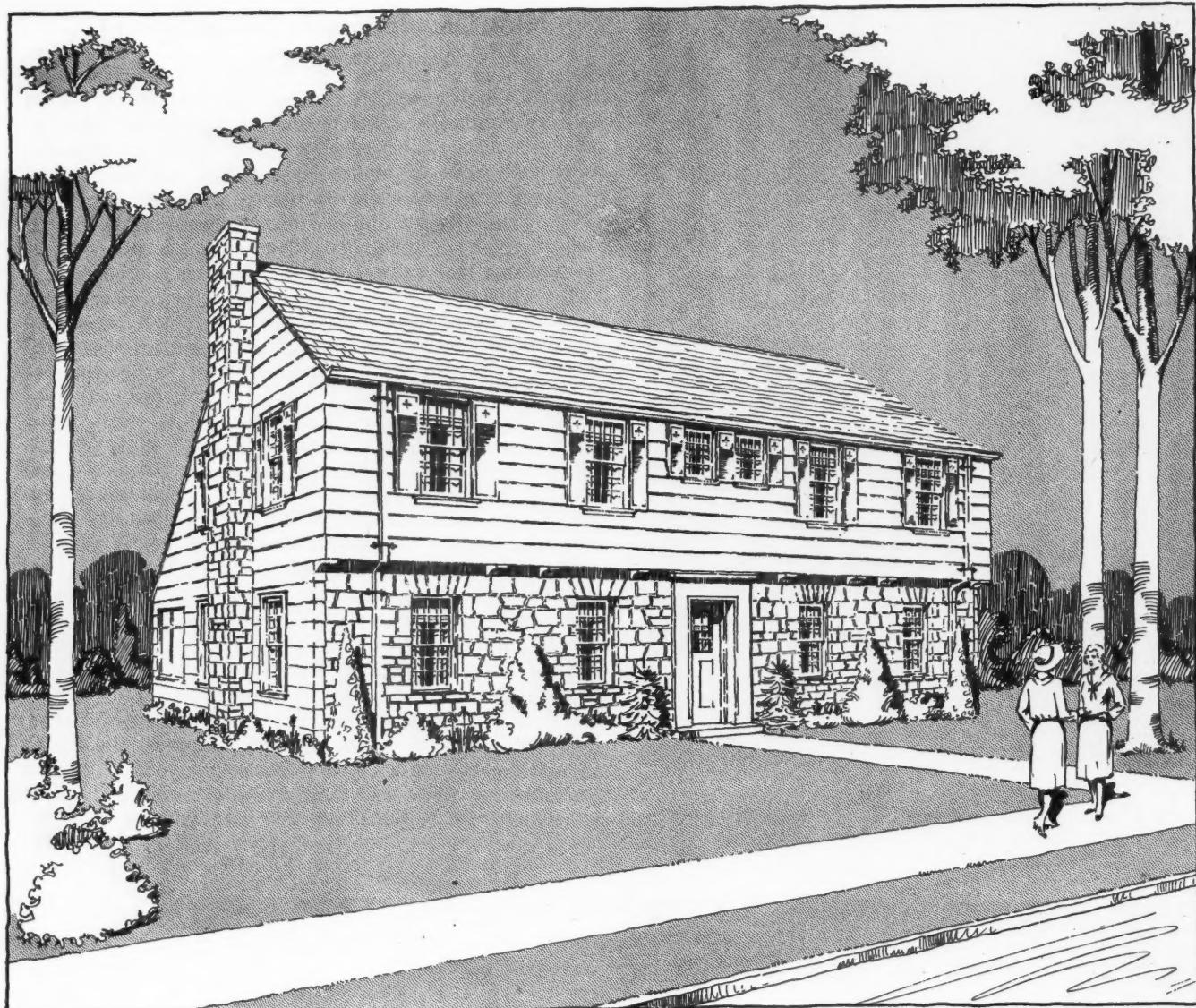
(Continued from page 54)

financing in the last few years, as the popular bond issue is practically obsolete and the insurance loan has taken its place. The most desirable buildings now are those with units of five to eight rooms and the method of figuring a loan today is that of income. First, the building must be well built, fully occupied, nicely located and of good surroundings. Then fifty-five per cent of six and one-half times the fair income is the basis of a loan. This is the general plan of figuring loans and when applied to co-operative projects it is necessary to use the estimated fair rental value in place of the actual monthly assessment, as this assessment in co-operative apartments is and should be quite a little below that of rented apartments of a similar grade. On construction loans, seventy per cent of all apartments must be sold before opening of the loan. Co-operative projects when properly built and financed, as above outlined, are considered very desirable and with much less hazard. Naturally, the equities will be higher but the monthly assessments will be proportionately lower, which should appeal to the thrifty buyer.

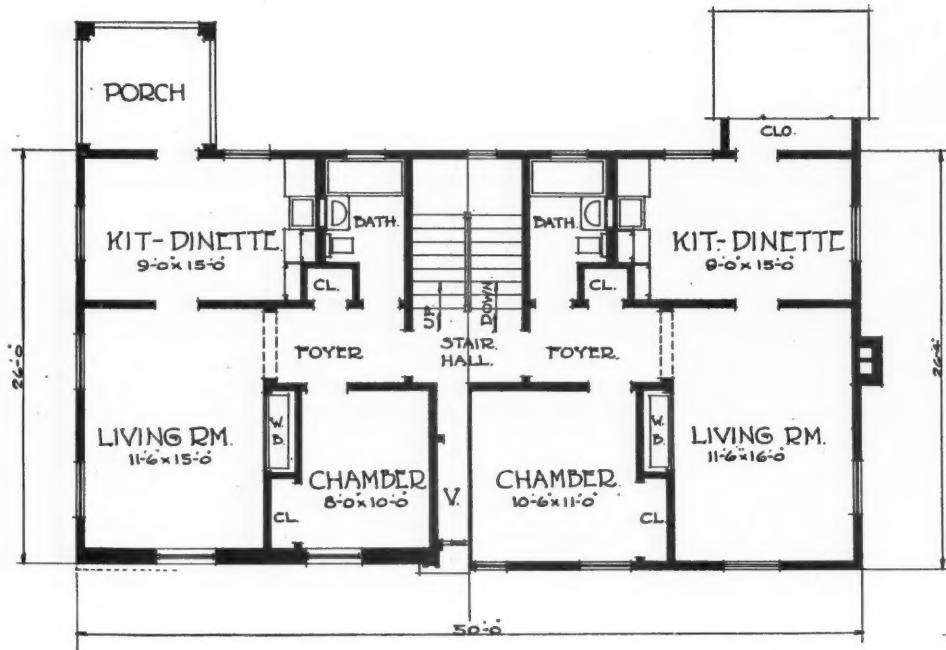
Probably more than ever before will it be necessary for the co-operative apartment developer, before deciding on the course of development he wishes to promote, to analyze, from a carefully made survey, all the available apartments for rent in the district, for it should be readily recognized, unless you can show a prospect a saving in addition to offering him something better than is available for rent, that there is little incentive for him to assume the responsibility of ownership.



Portable Power Woodworking Shop Set Up in the Basement of the Leeb-Tyroler Apartments by the Carpenter-Contractor. Two men with power saw are mitering window stops and other wood trim on a production basis. Note racks and bins in background for storage of the different members.



WM. G. KRIEG, Architect.



1/2 PLAN 1ST FLOOR

1/2 PLAN 2ND FLOOR

Homes Here for Four Families

The Estimated Cost of This Unusual Apartment Building is Only \$11,000.00. It would grace any home section and pay its way as an investment.

Progress In CONCEALED RADIATORS

Will new houses, apartments, business structures be salable or rentable without this feature? Scientific research has perfected it to a high degree. Advantages include greater beauty, better circulation, instant heat control, cleanliness, comfort, efficiency and more healthful heat.

WITHOUT doubt concealed radiation is one of the most revolutionary of recent construction developments. Use of compact, durable heating units placed out of sight and out of the way inside a cabinet or within the wall is a practice that has passed through the experimental stage and is now an accepted necessity in modern building.

The enclosed radiator is the product of the highest type of constructive research. As a result of such research the heating units are now obtainable in aluminum, copper, brass, cast iron, or alloys or combinations of these metals, all backed by thorough scientific study. Heating units have been developed especially for this type of radiator. The basic type of concealed radiator consists of a compact heating section enclosed in a substantial insulated case with air intake at the bottom and outlet grill at the top, which is usually controlled by a damper. As a rule the concealed radiator is sold as a unit, ready for installation, which is extremely simple.

There are many reasons why concealed radiation has made such rapid strides. First and foremost, of course, is the question of beauty and convenience in the room. Placing the radiator in the wall makes possible any desired arrangement of furniture and a decorative effect that is practically impossible where an exposed heating unit is installed. This fact has come to be so widely recognized by clients that they are practically unwilling to accept anything but concealed radiation.

Sales tests have already conclusively shown that houses sell better with the radiator enclosed, semi-enclosed or recessed. The concealed or recessed radiator is getting especially favorable attention because of its space saving features. With every inch of floor space being used in new homes, apartments and business structures, it is worth a great deal to have the space formerly occupied by exposed radiators available for active use.

In homes especially the advantages from a selling viewpoint are apparent. In living and dining rooms, kitchens, bathrooms and bedrooms they save space and make possible arrangements of furniture that the exposed radiator prevented.

It is pointed out, furthermore, that concealed or invisible radiators save more space than the actual floor area formerly occupied by the exposed type. This is because most concealed radiators are equipped with damper control which permits the occupant of a room to cut off the heat entirely when he desires. Formerly the area within several feet of an exposed radiator

could not be used because of the intense heat, or danger of coming in contact with a hot metal. Now with the concealed type of radiation the area close to the radiator is comfortable due to the more natural circulation of air, and due to the fact that where desired, the heat can be entirely and immediately shut off. The value of *damper control* of radiator heat is just beginning to be fully realized, and it is a coming feature that should not be ignored.

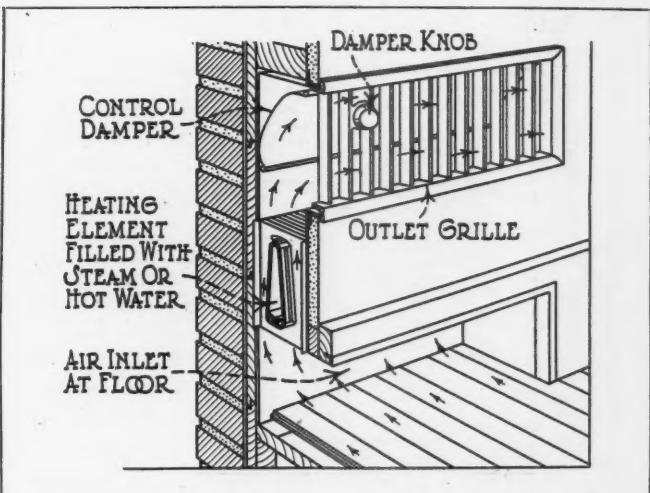
Operation of the concealed radiator is based on the most scientific of heating principles. When a fire is started in a fireplace, for example, the warm air rushes up the chimney, due to the draft created by the fire or heat. Enclosed radiators operate on the same principle, except that the warm air enters the room where it is needed. The steel case or cabinet acts like a chimney while the heating element furnishes the heat required to produce the flow of air.

Cold air is drawn off the floor through an open space or grill at the bottom of the cabinet, is heated by the concealed unit and flows upward and out through a grill near the top. Since the outlet grill can be opened or closed by means of the damper control, the amount of heat given off can be regulated as desired. When the damper is closed the heating element remains hot but very little heat is given off since the flow of air has been stopped and the radiator enclosure is well insulated.

Specifications of different manufacturers vary, but a large number recommend thorough insulation of the heating cabinet. It is especially important that the outside wall be insulated to prevent escape of valuable heat in that direction.

The concealed radiator may have both damper and valve control. In this case the cabinet front is easily removable or is pierced by doors which provide access to the radiator valve. In residences or other two- or three-story structures, cutoffs or automatic control valves and traps may be installed on the pipe branches in the basement, or below the room in which the radiator is installed; in these buildings the damper control is perfectly adequate. In multi-story buildings, such as apartments, hotels, and offices, however, where it is impractical to run separate pipe risers, valves and traps may be installed at each radiator; for this type they are made accessible through the removable panels or doors.

It is generally claimed that the concealed radiation



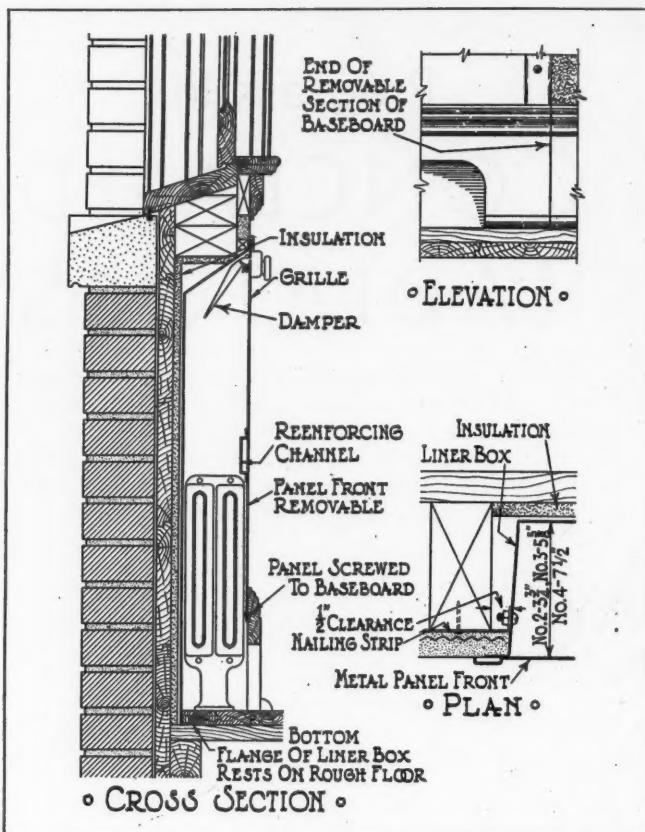
Completely enclosed in the wall, which is plastered over, this invisible radiator has an aluminum heating element, damper control and well designed cabinet.

principle results in more healthful, comfortable heat. It promotes a natural air circulation of the greatest efficiency, as contrasted with the exposed radiator which usually resulted in a hot ceiling and cold floor. The fact that the heat can be controlled makes for greater health, also, as it is not necessary to open up windows; the occupant merely closes the damper, cutting off all entrance of heat.

Cleanliness is another feature of the concealed radiator that is a strong selling point with housewives. The exposed radiator has always been a bugaboo as a dust catcher, and it is a tremendous asset to have it completely enclosed so it cannot accumulate dirt. In addition to this feature, the concealed radiator makes a cleaner room, because the air passing over the heating unit does not become contaminated and instead of rising straight up is thrown out into the room in such a fashion that it does not create streaked walls or soiled drapes.

Accompanying the remarkable technical development of the concealed radiator has been an increase in efficiency which has gradually brought down costs to the point where the expense is not incompatible with general and widespread use. Some manufacturers claim that when the economies resulting from ease of installation, ease of use during construction, and saving of space are considered, the cost of the invisible radiator is no greater than the exposed type.

Undoubtedly ease of installation is an important feature of the concealed radiator. As we have said, they are usually sold as a complete unit, including heating unit, metal case, and grills; however, it is possible to purchase the different parts separately. The units have been developed for use in any thickness of wall down to as low as $3\frac{1}{2}$ inches. They are available in such a variety of sizes and shapes that any construction can be accommodated. Installation has been simplified to the



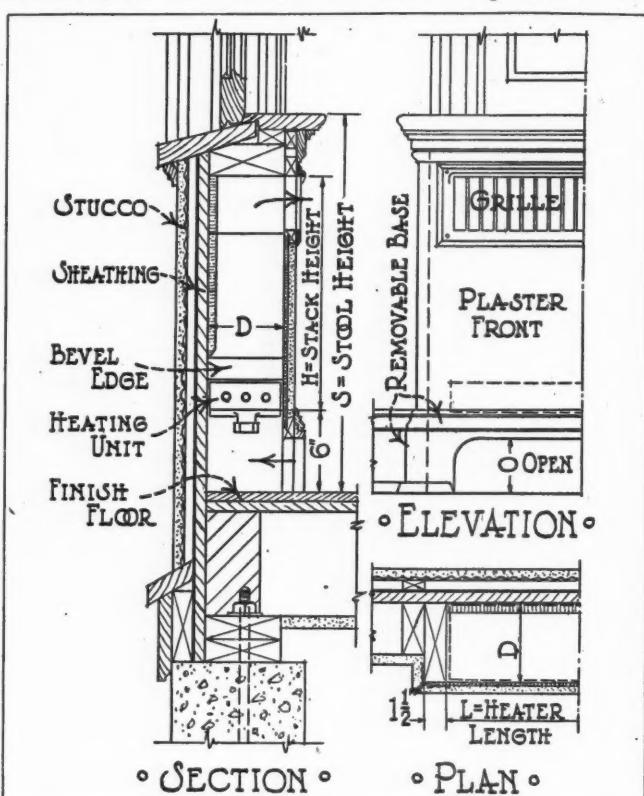
Details of installation of cast iron concealed radiator with metal panel front having damper control. Has metal liner box and layer of insulation.

maximum degree. A recess or wall pocket of proper size is left in the wall, the heating unit encased as provided by the manufacturer is placed in the recess and the pipes connected. Then the wall front is finished over and decorated in harmony with the room.

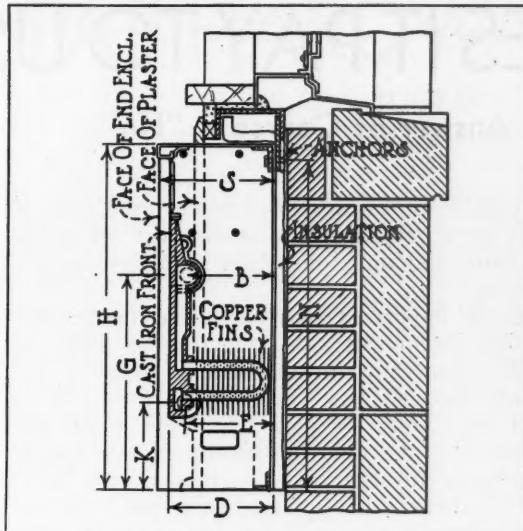
A number of varying types have been developed that are suitable for different situations and conditions. The builder can decide whether he wishes to have a plaster or wall-board surface in front of the heating unit or whether he wishes to have a metal panel exposed flush with the surface of the wall and decorated in harmony with the rest of the room. Or the radiator may be only partly recessed, with the front projecting a few inches into the room. Accessibility of the heating unit is of course a feature that enters into consideration of this type of heating; where the metal panel front is used the entire radiator is exposed by simply removing four screws and lifting off the panel. Concealed radiator types have also been developed in which it is easy to get at the heating unit even where the wall has been plastered over.

It is noteworthy that the new heating units have been developed probably to the highest state of perfection ever known in heating history. Most of these units, which are compact, sturdy, and of scientific design are tested under enormous pressures, sometimes as high as 500 pounds per square inch, even though the ordinary heating system has of course no demand for even a fraction of such pressure. As a result, however, the radiator comes to the builder so thoroughly tested and strongly made that there is little danger of its going wrong.

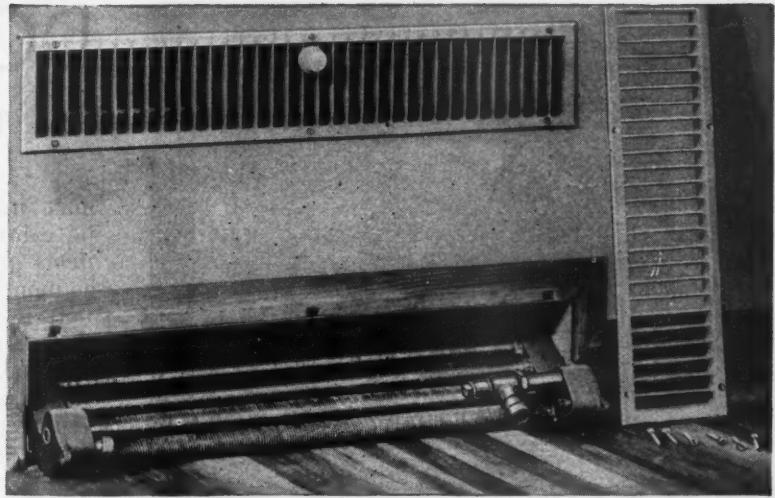
Enclosing the convection radiator and operating it as a concealed heater is a scientific development that has required great study, and is a remarkable advance in heating practice, combining as it does highly desirable



Installation details of a concealed convection heater recessed in frame construction. Heating element consists of copper tubes and metal fins. $O=3\frac{3}{4}$ "; $D=3\frac{1}{2}$ ", $5\frac{1}{2}$ ", $7\frac{1}{2}$ ".



Partially recessed radiator with copper cast heating element and cast iron front.



The copper and brass heating unit of this type is easily removable without disturbing concealed cabinet.

principles of heat supply that have never been available to the public before. The invisible radiator may be installed with any type of water or steam system including the one-pipe, two-pipe, vapor or vacuum steam systems, and the open tank, closed system, or forced circulation water types.

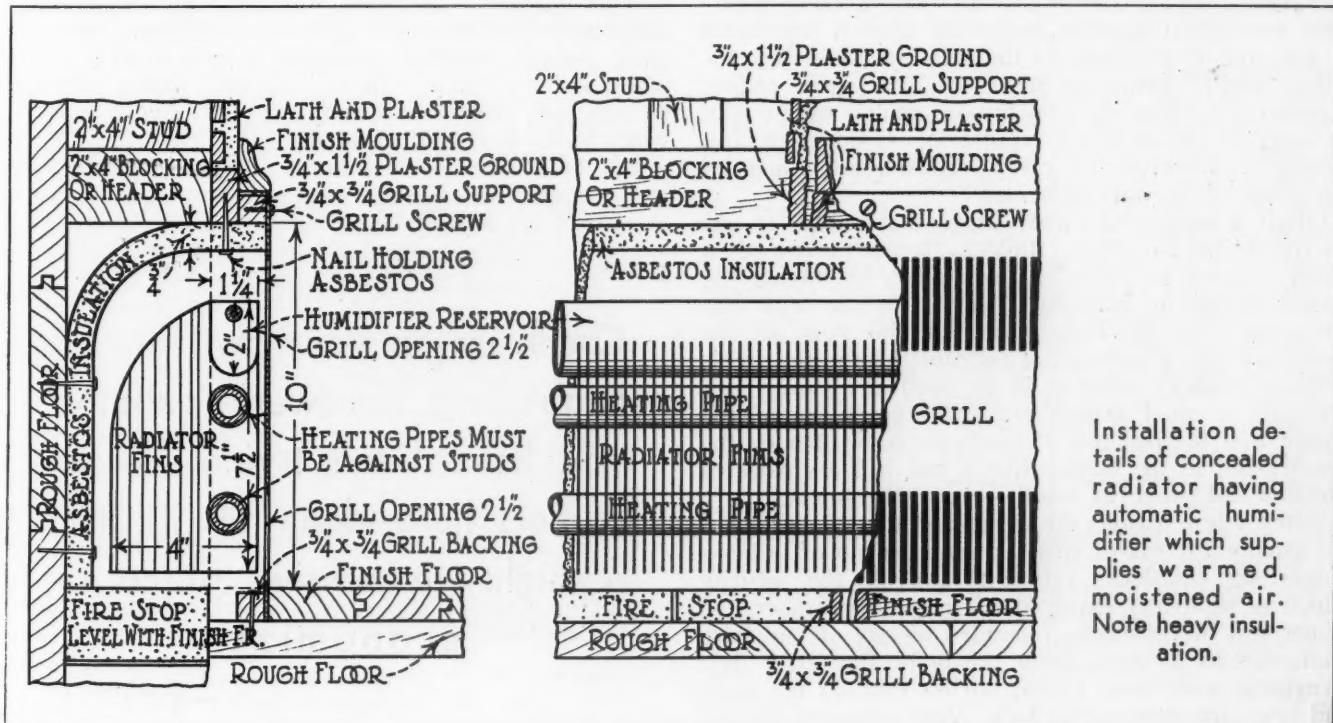
In a sense, building the radiator into the wall may be said to be a development of the exposed cabinet type radiator. Perfecting of the compact, efficient heating unit requiring small area was first followed by placing of these units in metal cases which were artistically decorated and placed in the room just as the former types of exposed radiators had been. The heating principle involved, that of taking the air from the floor, heating it in the radiator enclosure and giving it out in a gentle current from a grill at the top, proved very successful, and is still popular where it is not found desirable to place the entire unit within the wall.

A recent further development in concealed radiation has been the addition of an automatic humidifier within

the cabinet. This is an improvement that points the way to the most perfect type of healthful heat. In this type the cold air is drawn from the floor through a grill close to it and passes up through a heating unit, where it is warmed, and then through an automatic humidifier which supplies the correct percentage of moisture. The warmed, humidified air then passes out through the top grill and out and upward in the approved scientific manner.

This type of heating is not only an excellent feature for the new home, but is very desirable in the modernizing of old ones. The increasing demand of the public for more scientific and healthful heating is opening a big field for modernizing in this fashion.

In fact the entire field of cabinet, recessed or concealed radiator heating is one that offers tremendous opportunities for modernizing. The hundreds of thousands of homes where exposed and unattractive radiators irk housewives offer opportunities for new business that wait only for the right kind of selling tactics.



Installation details of concealed radiator having automatic humidifier which supplies warmed, moistened air. Note heavy insulation.

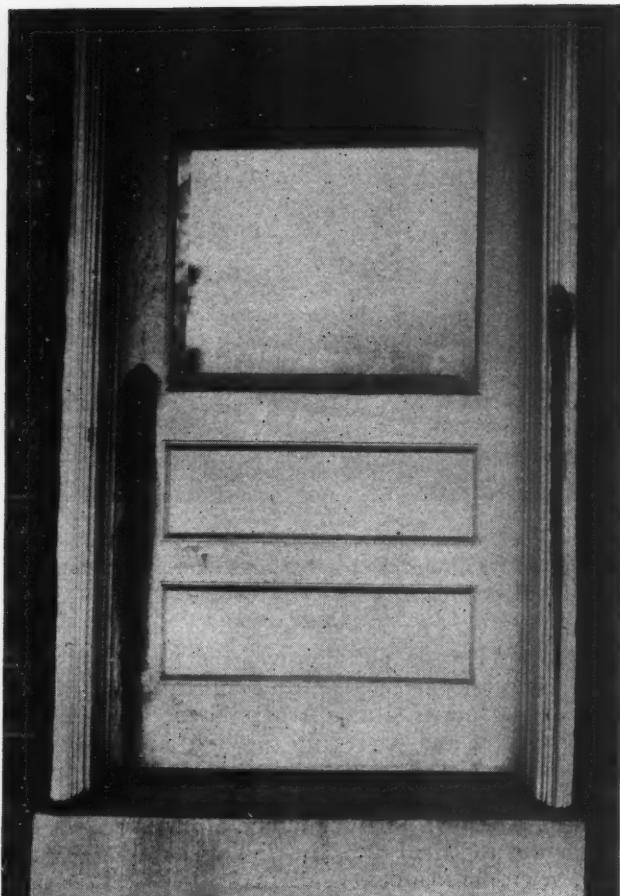


Figure 1—Rust Streaks Soon Proclaim Its Cheapness.

HARDWARE for the home is altogether too often thought of as one of the smaller and less important items, and as one of the first to be cut when the cost of the house must be reduced. Yet, when we stop to think of it, what a great difference good hardware makes in the convenience, appearance and security—and therefore the salability—of the homes, stores and other structures we build. And, on the other hand, what an annoyance and an eyesore cheap hardware very often becomes, especially after a few years of use and of exposure to the weather when this so-called "cheap" hardware proves to be a never ending expense rather than an economy—a liability rather than an asset to the builder's reputation. Good hardware, therefore, is worthy of careful consideration and its fair share of the appropriations.

Often a misguided owner urges the builder to cut the cost of the hardware. Builders themselves are often sorely tempted to "save" a few dollars by buying the cheaper grade of hardware. For, is it not true that the cheaper grades look practically the same as the more expensive grades as we examine them in the architect's or builder's office or in the hardware store? But the builder must remember, and impress upon the owner, that the real test of hardware comes not on the counter but in the home after it has had a chance to weather and prove its worth—or worthlessness.

After a few seasons the cheaper grades of hardware are usually a streak of rust and soon get out of order—hinges sag and locks refuse to provide the security which is rightfully expected of them. Remember, the owner will be constantly reminded of any of our false economies as he goes about the home day after day, struggling with loose knobs, latches that do not latch and keys that stick in the lock. Very often the builder

DOES IT PAY TO USE

The Answer of Course is "No"

must make repairs or even replacements, especially if he values his good reputation, otherwise the offending items grow more and more unsightly and troublesome as months go by.

It is especially important that hardware at entrance doors—not only *front* but *side* and *rear* as well—be of good quality, not only for the sake of security but for appearance as well, for this hardware is plainly visible to all who enter or pass by. Very often the visitor gets his first and only impression of the quality of the entire home through this one item of the front door and its hardware. Cheap hardware gives the impression the entire home is of the same cheap construction. Good substantial hardware, however plain, brands the home as well built and of lasting construction.

In Figure 1 is seen what was once regarded as a home of the highest quality, but after several seasons of exposure to the weather, the front entrance has taken on a decidedly slovenly, cheap appearance due to the rusting of the hardware. Not only has the steel rusted and destroyed its bronze plating but the rust has left its ugly footprints on the once white paint. The use of good hardware would have prevented this run-down-at-the-heel appearance and would have lent an air of refinement and permanence to this home as long as it stood on its foundations.

Compare this unfortunate ugliness with the picture of beauty and neatness seen in Fig. 2. These two photographs are better proof of the economy of good hardware than many pages of argument. Here the quality of the hardware is good though not necessarily the most expensive, and as a result the metal is not rusted and the paint is not stained. Incidentally the photograph in Figure 2 is not of a newly completed home; moreover the hardware had a chance to weather and prove its quality before the photograph was taken. Although the first cost was slightly more than the cost of cheaper grades of hardware, this extra investment will continue to pay dividends in the form of better appearance, greater security, convenience and comfort for many years to come. In the end this means distinct savings and greater satisfaction to the owner, all of which is the best kind of advertising for the builder.

But before the owner can be convinced that good

Check up on your own record regarding hardware—perhaps you have been trying to cut corners here—don't do it! It's a mighty expensive place to economize.

—Editor

CHEAP HARDWARE?

By MILTON TUCKER

Author of "Buying an Honest House"

hardware is a paying investment, he is likely to inquire what he has a right to expect from it. First of all, the hardware which is selected for the home should provide ample security; and while it should be sure and dependable in its operation, nevertheless it should work smoothly and without undue effort, so that it may be operated as easily by a child as by the master of the house. The hardware should be of a type which is best suited for the work for which it is intended and should be strong and durable enough to prevent breakage or wearing out. And last but not least it should possess beauty with a permanent weatherproof finish. Barring abuse and accident, hardware should require neither replacement nor expensive repairs for the life of the building. These may seem to be unreasonably stiff specifications but *really good* hardware will fulfill the requirements without the least trouble. And there are few home owners who would be satisfied with anything else.

Where is the home owner or housewife who would feel contented with a door lock which did not provide adequate protection against intruders? Moreover, who of us would want a lock that could not be operated easily by a child returning home from school when mother is at her bridge luncheon or otherwise engaged, as sometimes happens even in the best of regulated families. And who wants a lock which is continually getting out of order just at the time when we depend upon it most as when leaving for that week-end trip? I am sure no one wants hardware which will not hold a casement window securely open at any angle or which will not keep it tightly closed against driving rains and wind. And yet we see about us every day casement hardware which is too light or otherwise unsuited. And what is more annoying than to hear a window rattling on a windy night because it was not fastened by suitable locks? Finally, who wants to see a fine nickel or brass finish crumble and peel because it was merely a plating over a rustable steel base?

In general, the comparative value of two locks, or any two similar pieces of hardware, made of the same metals, may be judged by comparing their weights. The heavier locks have heavier, stronger working parts and as a result work smoother, provide greater security and are less likely to need repairs and replacement.



Figure 3—Garages Deserve Better Hardware Than They Usually Get.



Figure 2—Good Hardware Does Not Rust or Stain.

If the hardware is to be used on the exterior it must be genuine solid brass or bronze. Steel hardware plated with other metals is eventually attacked by dampness until rust forms on the steel backing and breaks through the thin plating, with the results seen in Figure 1. Unfortunately the rusty hardware is not only an eyesore in itself but the rust washes down over the wood-work, stucco, masonry, or other materials, and leaves an ugly stain which is very difficult, if not impossible, to remove. Solid brass or bronze, of course, does not rust, but retains its beauty for all time.

The need for good hardware applies not only to door knobs and their plates or escutcheons, but also to butts, letter slots, bell buttons, house numbers, and all other metal parts exposed to the weather. Even though the hardware is not exposed directly to rain, dampness will corrode the plated steel, and the rust which forms will break up the plated finish. It is especially important to use only solid brass or bronze at the seashore where the salt air and high humidity annually destroy thousands of dollars worth of cheap hardware.

It is a good investment for garage hardware to be of brass or bronze, in spite of the greater cost; for cheaper work the hinges and thumb latch should at least be galvanized if the unsightly appearance shown in Figure 3 is to be avoided. If this hardware is not galvanized it must be painted at frequent intervals to keep the steel protected.

When planning the cost budget for a house, don't skimp on the hardware. It is about the most important item of the entire list, and deserves a larger percentage of the total appropriation than is often allowed. This is one of the items where a small increase in the investment pays big dividends throughout the life of the building.

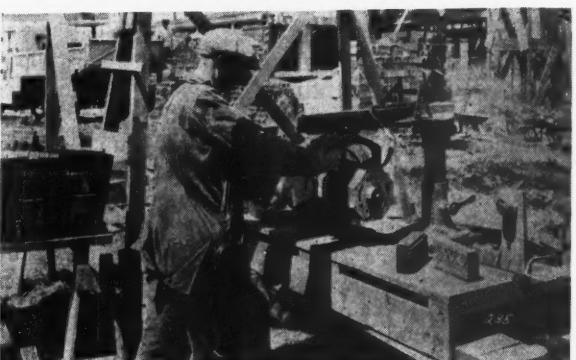
POWER SAWS PLUS PLANNING



1.



2.



3.



4.

Right on the job in all sorts of uses! No. 1: trimming rough flooring. No. 2: set-up on 27-apartment building. In No. 3 we see a power saw used to trim brick. No. 4 shows cutting of old planking for joists.

Pittsburgh Firm Reports Large Savings

THE accompanying pictures show a wide variety of power saw uses which are cutting costs for their owners. Saws have been perfected to a high degree of speed, safety, reliability and convenience and now the trend among builders is to devise new ways to plan work to make the most of them.

Planning methods save the Mellon-Stuart Company of Pittsburgh, general contractors, much money, according to J. B. Kelly, Vice-President. The saws are used to some extent for trimming tops and bottoms of doors, and produce a cleaner and better cut than possible by hand sawing. On the Koppers building a power hand saw was set up on a table and used for sawing $1\frac{5}{8}$ inch and $1\frac{3}{4}$ inch yellow pine for forms. Occasionally timbers as thick as 4 inches were cut. One of the greatest uses by this firm is cutting flooring, especially hard maple, which is handled at high speed.

The Mellon-Stuart power saws showed up to especial advantage in cutting floor openings in the Kaufman building for a large escalator installation. Forty-eight 30 by 40-foot openings were cut in flooring consisting of $\frac{7}{8}$ -inch hard maple over $\frac{3}{4}$ -inch yellow pine laid on sleepers embedded in a 4 inch concrete slab.

The openings were first roughed out to the full bay width, about 30 feet, so as to expose the steel beams, and removal of flooring for the 48 openings required about 6,720 feet of sawing. After new cross-beams and framing for the escalators had been installed the openings were trimmed to match the floor boards, requiring an additional 120 feet of sawing per opening or

A clean cut, done quickly and well. The power saw gets into difficult spots, speeds work. 5.



REDUCE CONSTRUCTION COSTS

Work Speeded Up by Power Tools

a total of 5,720 feet for the entire second cut. The grand total of 12,480 feet sawed at the average rate of 5 feet a minute or 300 feet an hour, requiring about 41.6 hours of operation with the power saw.

Cost of this work is shown below. In computing fixed charges on the electric tool the first cost (which is placed higher than most types cost today) of saw and blade is depreciated on the basis of a 3-year useful life. Actual repairs on the tool in question during the 10 months' service have amounted to \$24.80 and a yearly allowance of \$30.00 has been made, resulting in a total fixed charge of \$109.95. This firm operates 8 hours a day for 300 days a year and it is estimated that on the average job the saws are used about 20 per cent of the time or at the rate of approximately 480 hours yearly, so that the hourly fixed charge on this equipment amounts to about 23 cents.

Cost Study

Cost of sawing by hand is figured at the same labor rate as for power-sawing, \$1.50 an hour, and an additional allowance of \$0.05 an hour is made for depreciation and sharpening of hand-saws.

A comparison of these costs shows that power-sawing resulted in a saving of \$78.78 per opening over hand sawing. The total savings for the 48 openings made on this job amount to \$3,781.44. At the average saving rate the power saw pays for itself about every 2½ hours of actual operation.

Savings Effected By Electric Saw

Job Data

Sawing double floor, maple top, to make 48 30x40' openings.
Two cuts required, totalling 260' per opening.

Sawing rates—hand saw—5' per hr.

Electric saw—300' per hr.

Labor required per opening with hand saw—

First cut—28 hr.

Second cut—24 hr.

Total...52 hr.

Investment

One Power Hand Saw.....\$ 200.00
Four 10" blades @ \$3.53.....14.12

Total

.....\$ 214.12

Annual Fixed Charges

Depreciation—\$214.12; \div 3 yr.....\$ 71.38
Average interest—\$214.12 \times 4/3 \times .06/2.....8.57

Repairs—estimated.....30.00

Total

.....\$ 109.95

Hourly Operating Costs

Hourly fixed charge—\$109.95 \div 480 hr.....\$.23

Sharpening blades—(1 hr. \times \$1.50) \div 8 hr.....19

Oiling—allowance.....01

Power—1 kw.-hr. @ \$.03.....03

Labor—1 man @ \$1.50/hr.....1.50

Total cost per hour.....1.96

Unit cost—per lin. ft.—\$1.96 \div 300 ft.....007

per 30 ft. \times 40' opening—\$.007 \times

260 ft.\$ 1.82

Alternate Cost by Hand Sawing, per Opening

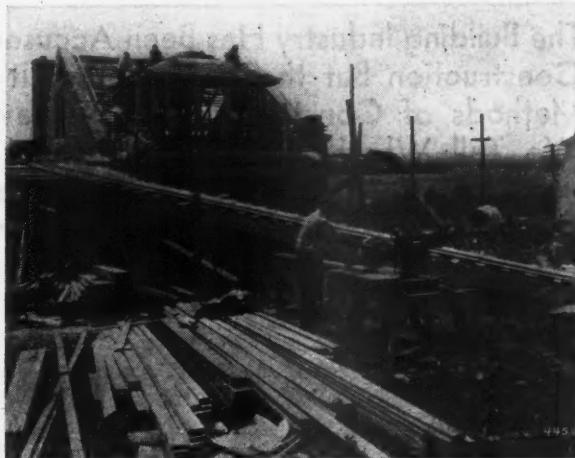
Labor and saw cost—52 hr. @ \$1.50/hr.....\$ 80.60

Savings Through Use of Electric Saws

Per opening, by difference—\$80.60—\$1.82.....\$ 78.78

For job—48 openings \times \$78.78.....3781.44

Certified by Nielson Surveys.



6.



7.



8.



9.

No. 7: a power set up that saves money. No. 8: this kind of work used to make us sweat. No. 9: The handy power saw has a thousand time-saving, labor-saving uses in house work. No. 9: shop backs the field force with standard lengths.

THE PRODUCTION OF

The Building Industry Has Been Accused of Backwardness in Developing New Methods of Construction But the Truth Is That It Has Been Experimenting for Years with Radical Methods of Construction. Why Haven't These Methods Succeeded and How Can We Tell Whether the Revolutionary Methods Being Advanced Today Are Sound? Just What Are the Obstacles That We Are Up Against in This Problem of Trying to Produce a Low Cost House? What Is the Solution Likely to Be?

In the first article of this series which appeared in the June issue of AMERICAN BUILDER AND BUILDING AGE, we discussed the four chief factors that influence the final cost of the home: Land Cost, Financing Cost, Improvement Cost and Construction Cost. Having treated the first three factors in the first article of the series, we will devote this second article to the fourth and most important factor: the cost of constructing the home itself.

tried to develop a method by which concrete was poured into a steel framework to form the shell of the house. This method did not work out; but this did not discourage other ambitious inventors eager to open the great potential market for small houses. After the war there was a veritable epidemic of new ideas on this subject. In the years 1920, 1921, and 1922 inventors were especially prolific; but practically all of the methods then advanced have since gone completely by the board.

Many active builders today have never even heard of some of the construction methods that have been advocated in the past and which have been used for a time in certain localities.

The Aiken Method

There was the Aiken method of construction in which the basic idea was to cast the walls in horizontal moulds on the site. Window openings were formed around boxes that protruded vertically from the horizontal form. Walls were cast of concrete, all in one piece. After the wall was hard, the whole side of the house was raised into position. Steel reinforcing rods protruded from each side and interlaced with those protruding from the adjacent wall which had been cast and raised in the same way. Around these interlacing rods, a corner column of concrete was cast to fill out the corner. A real analysis of cost was never made of this method and it was never used to any extent.

Then there came into vogue a number of schemes for the manufacture of masonry units and the assembly of these units on the site. One of the best known of these

MUCH has been written, and a great deal more has been said, about reducing the cost of building houses. It has been claimed that if modern methods of mass production were applied to home construction, houses could be produced so cheaply that the average man could afford one. Such statements are often made loosely by people who know nothing about the practical problems involved.

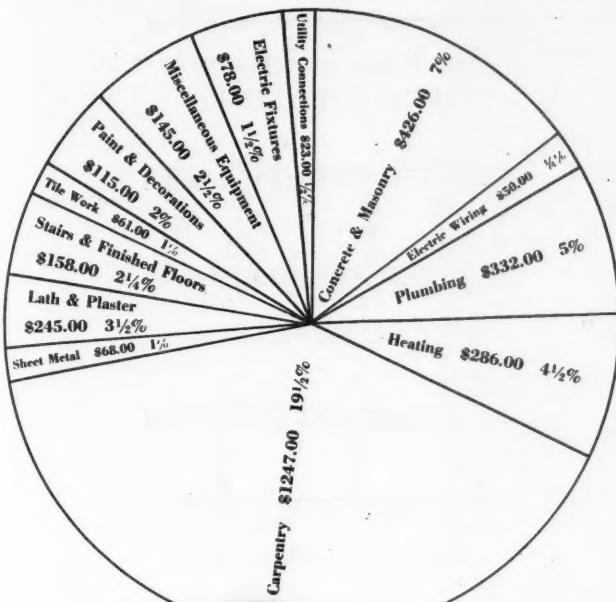
Some would have us think that the agitation for a low-cost, mass-produced house is something comparatively recent and that it has only been within the past few years that we have done much thinking on the problem.

On the contrary, the question is as old as the hills. Years ago, as great an inventor as Thomas A. Edison

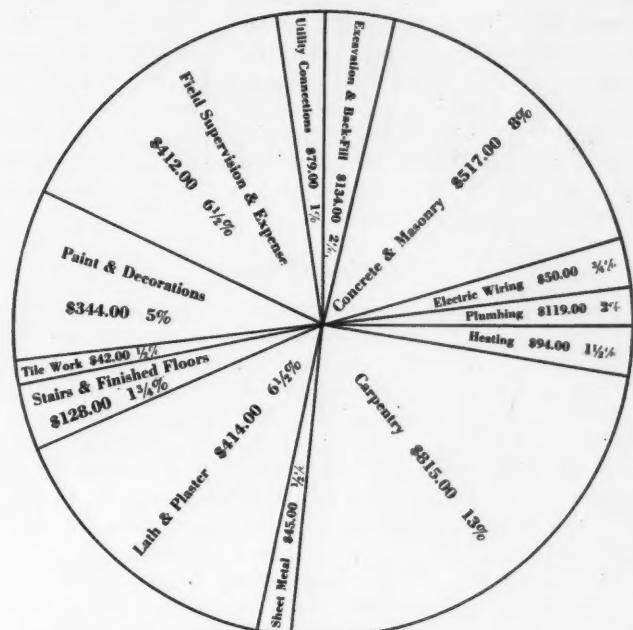
Will the Home of the Future Be Built by Welding together, on the Site, Standard Units or Panels That Are First Fabricated in the Factory? The picture shows a standard frame panel being welded to sill plate in the construction of a two-story, six-room dwelling, built in Mamaroneck, New York, by the arc-welding process. Those who favor the metal house as a solution of the low-cost housing problem include welding as one of the available means of erection.



LOW COST HOUSING



LABOR \$3212 49%



MATERIALS \$3238 51%

Distribution of Average Cost of Labor and Materials for 175 Houses Built on Eastern Seaboard. The total cost of both labor and materials is \$6,450 on the average, the selling price of a single house being about \$10,000.

methods is that devised by Grosvenor Atterbury of New York. The basic principle of his scheme is the casting of different parts of the house in concrete moulds, the transportation of these concrete cast units to the job, and their erection into place by means of a derrick. (See illustration, page 68.) The construction units are so designed as to be comparatively few in number. His scheme, like others of this nature, raises interesting questions. How much does it cost to rig up the derrick and how often does it have to be changed during the course of operation? What is the cost of transporting the pieces to the site?

Concrete Slabs

Another construction method has been worked out in Frankfort, Germany, where concrete slabs are made out of lava. These are light and easily raised and lowered by means of hooks put into rings that are let into the tops of the slabs. The sides are tongued and grooved and fit together when lowered down from above. Slabs are made of varying lengths and widths. For example, on the side of a house where there is a large window, the opening is carried clear to the top. On one side of this opening is placed one long, rectangular slab say 6 feet in width; on the other side of the window another slab of the same dimensions is placed, and below the window opening are put two slabs that occupy the space between the bottom of the window opening and the foundation. Thus a wall is quickly formed out of four slabs fitted together. This method has been used extensively in Germany but does not seem to have effected much saving in cost.

Many people have thought that the eventual solution of the problem of a low cost method of house construction would be found in the use of light weight masonry

units; and a number of such units have been developed. Among these have been Armorboard sectional panels, made of concrete, 3' by 7' by 12', bolted together on the job.

Tee Stone is another precast, structural unit, shaped like a "T," reinforced with steel wire and rods, and weighing less than 16 pounds a square foot. These units are made in lengths from 8 to 16 feet, measure 16" across the tops of the flange, and have a depth of 8". The "T" shape enables them to be arranged in a variety of formations for wall and floor construction. (See drawings, page 68.) The units are bonded together on the job.

Wall panels made of aerated and fired clay have been recently developed in Germany. These are so light that units as large as two square yards have been used. This panelling is said to be impervious to moisture and may be utilized as a curtain wall or veneer.

Another European material which has been developed is called "Solomit," manufactured of vegetable matter pressed into panels, reinforced by steel wires. Panels are made 5 feet in width and up to 14 feet in length. This material is said to be fire-resistant, sound-absorbent and low in cost. It is also said to have considerable structural strength.

Fabricrete

Another method of construction that has recently been developed by a California architect is called Fabricrete. Hollow, rectangular shells of stucco are made by plastering stucco onto a wire framework. The long, rectangular shells are placed side by side to form the walls and the joints are plastered over. Observations on the structural strength of stucco following the Berkeley fire led to the development of this method. It has been used on a number of residences in the vicinity of Berkeley.

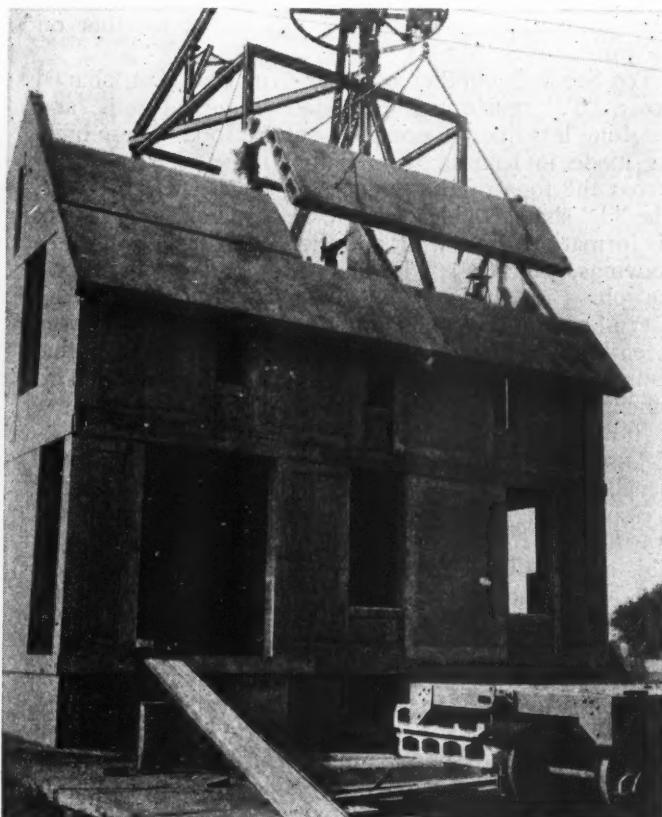
Modern builders are more familiar with the steel frame method that has been developed for small house construction. This method has been employed in practice, either in the form of complete steel framing or partial steel framing in conjunction with the use of other materials in the walls and roof. Several sample homes have been put up exemplifying the common principle on which this method is based, which is, in reality, a fastening together of light steel frame members by means of nuts and bolts, casting the floor in a concrete mould and putting on an outside wall surface of stucco on wire lath or of brick veneer, fastened to the frame by wire or metal ribbons.

The Welded House

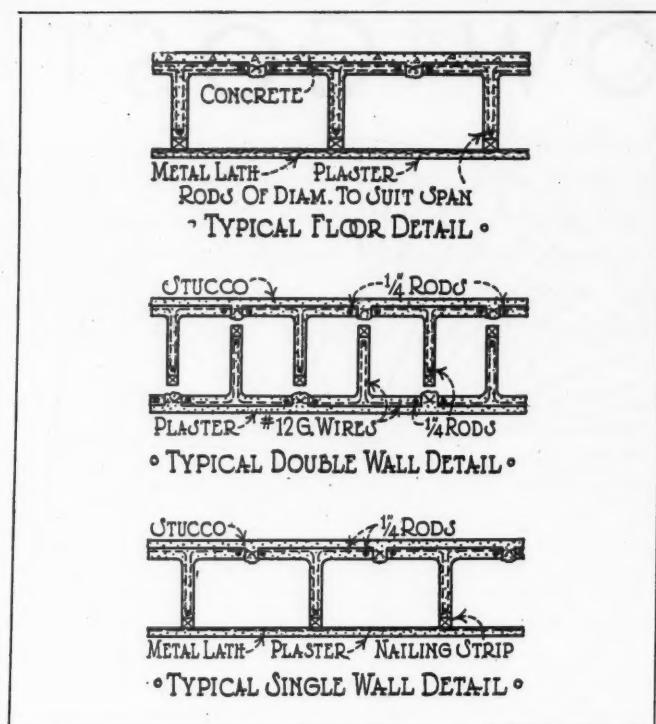
Recently it has been announced that the welding process has been applied to house construction and that a home built of steel units has been successfully erected by the welding together of the structural members.

The entire framework and all interior partitions are made up of standard size panel frames fabricated in the welding shop from $1\frac{1}{2}$ " angles. They are made up of two duplicate frames tied together with spacers to provide the regular wall thickness of four inches throughout the house. Two sizes are used, the wall sections in which there are no windows being 2 feet by 9 feet. The window sections are 6 feet by 9 feet. Floor joists are of steel truss construction, 8" deep and welded to the frame of the house at each end and to the bearing beam or partitions in the middle. Rafters are 4" channels with 2 foot spacing and are welded directly into the outside wall framework of the building.

In erecting the walls and partitions, a plate sill 6" wide by $\frac{1}{2}$ " thick was laid directly on the foundation to take care of any roughness on the concrete, and fastened down by means of bolts grouted in the con-



The Atterbury Method Uses Large Units of Precast Concrete, Lowered Into Place by a Derrick. Only twelve slabs are required to complete an entire roof.



Tee Stone Construction Utilizes Pre-cast Units Shaped Like "T's" That Can Be Arranged in Various Ways to Form Single and Double Walls and Flooring. The units are bonded together on the job.

crete. Fabricated panels are then welded to the sill, as shown in the accompanying illustration. Page 66.

Some students of house construction have felt that the only hope of materially cutting down the cost of house construction lay in producing metal units, for both frame and wall, by mass methods and in large enough size and of sufficient lightness so that erection would be easy and rapid on the site.

Nearly all of those who hold to this theory are agreed that the outer wall surface should be of metal, backed by an insulating material that comes from the factory as an integral part of the wall unit. Should such wall units then support the frame or should they be hung from the frame? This is a fundamental point in this class of dwelling.

There was recently shown in an architectural show in New York a metal house called Aluminaire, illustrated and described in the June issue of AMERICAN BUILDER AND BUILDING AGE. There are those who feel that this is the forerunner of the low-cost metal house of the future.

The designers of this house sought a structural solution in the use of cantilever beams, fastened to six slender aluminum columns, rising the full height of the house. Girders are bolted to these beams and form the outside perimeter of the frame and from these girders are "hung" the metal walls which are thin sheets of polished and ribbed aluminum, backed by insulating material. Partitions are made of angles bolted to the joists; the floors are of ferroboard construction, overlaid with a composition material.

Steel frame windows are used. It is reported that this house is to be erected on Long Island this summer and will be tried out under actual conditions.

Perhaps the strangest solution to the housing question ever offered is the Dymaxion House, designed by Buckminster Fuller of Chicago. Mr. Fuller has had the

The Dymaxion House, Designed by Buckminster Fuller of Chicago, Is the Strangest Solution Ever Offered to the Low Cost Housing Problem. It hangs by gravity from a central pipe through which run the service conduits for light, power, and heat. Rooms are arranged in circular fashion round the center and the whole thing can be revolved to face the sun. In this house, radical ideas and principles have been carried to ultimate, logical conclusions although the result may not suit the popular fancy.



courage to follow to an ultimate conclusion those logical principles that look toward a reduction of housing costs by revolutionary methods. His house is designed like a tent, supported by gravity on a central pipe through which come all the wires and pipes that supply water, power and light to the house. Rooms are grouped in circular fashion round the central pole, the whole is of flexible construction and is designed to give a maximum of physical comfort inside. The house can be revolved to face the sun. The illustration will give you an idea of its appearance. Are people ready for anything like this today? What is the answer to this problem anyway?

What any New Method Must Accomplish

An investigation of the possibilities of radical methods of construction by the City Housing Corporation, developers of Radburn, New Jersey, has disclosed facts of interest in connection with all methods for producing low cost housing.

According to the December, 1930, issue of "Housing," the City Housing Corporation found that "to justify any radical departure from current building practice—at any rate, to accomplish very much by such departure—any new process of house construction must do three things:

1. It must supply the structural shell of the house.
2. It must contain within itself an exterior finish.
3. It must also constitute an interior finish.

"In other words, while it might be desirable to improve the shell of the house, it was not going to be possible to save much money if the new invention were merely the substitution of a different type of shell from that then used, and if the new process necessitated an additional exterior and interior finish."

It is interesting to know that the City Housing Corporation, after an investigation of new methods, has constructed its houses and apartments at Radburn, New Jersey, along traditional lines, according to standard and approved methods.

All methods of reducing the cost of constructing the house have primarily concerned themselves with the

shell of the building, and have not paid much attention to the things that go into the house. Although the shell construction is important, still it must be remembered that the things that go into the house represent a considerable amount of the total sum expended.

If we were to employ research figures, we could show that the cost of the house shell itself does not run over 45 per cent to 60 per cent of the total construction cost, so that even if we make a material reduction in the cost of the *house shell*, it does not affect the total cost of the home a great deal.

Says Lewis Mumford in the *Architectural Record*: "To cut the cost of the shell in half, is to lower the cost of the house a bare 10 per cent."

It is a good thing to remember this fact when criticism is made of building and construction practice and we are told how cheaply homes could be made if factory methods were used. The fact of the matter is that many of the costs in home building cannot be touched by factory methods and other costs are incurred for items that are already being made by mass production.

Things That Go Into the House

For years we have been educating people to want the things that make for comfort and convenience of life within the home. Today, these things add materially to the cost of even the moderate-priced home. That it makes considerable difference what kind of products are chosen to go into bathrooms and what kind of equipment is selected for other rooms in the house, is a fact that every builder knows.

Take, for example, the feature home shown in the *AMERICAN BUILDER AND BUILDING AGE* this month. Make up two sets of specifications, one showing every possible piece of equipment, every specialty, every product that would make for a convenient, comfortable and durable home. Now, make up a second set of specifications that leaves out many of these modern products and gives just the bare house, little more than a shelter, although well-enough constructed and built out of the specified materials. It is easy enough to convince pros-

(Continued from page 106)



The House of the Month

Brick Stained White to Hasten Its Weathered Appearance, Appropriately Used in This New England Colonial Design

STYLES may come and styles may go, but the New England Colonial remains always with us. And there is good reason why this is true for Colonial America produced an architectural style which was, at once, artistically excellent, economically appropriate, and easily adaptable to changing modern requirements.

In our modern desire for the authentic we are, these days, doing many things to give our modern colonial homes the mellowed appearance of age. One of these is the practice of staining, or whitewashing, the brick walls to hasten their weathering. It is a practice which proves highly effective, and some really remarkable effects have been achieved.

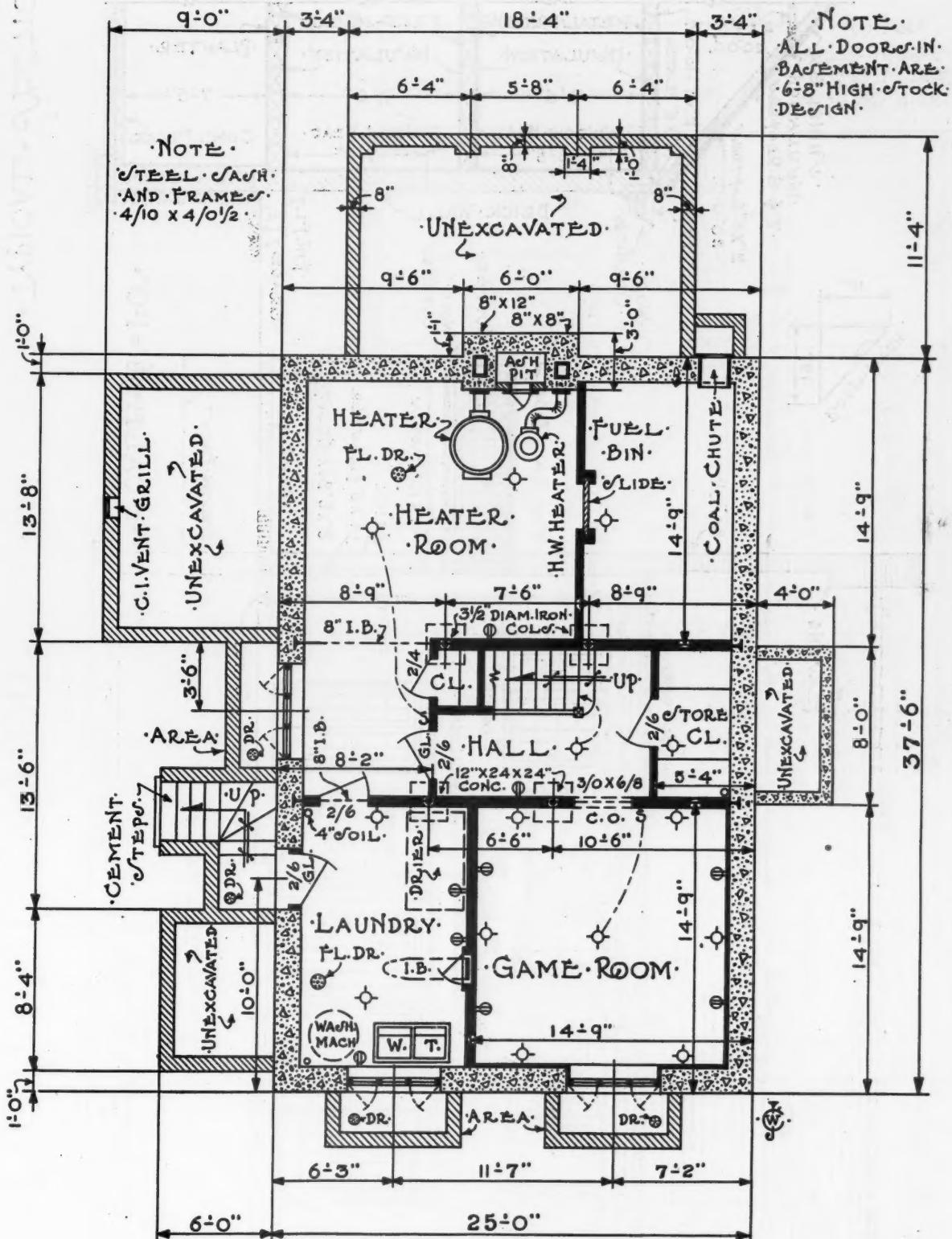
The house illustrated was designed by H. A. Salisbury, architect, of Houston, Texas, and the drawings reproduced on the pages that follow are based on Mr. Salisbury's original design.

Reference to these plans show how readily the Colo-

nial design can be adapted to modern requirements, for there is nothing antique in the provisions of our "House of the Month." Rather is it an example of excellent modern design full of suggestion for the architect, builder, or student of design who gives careful consideration to the treatment of the age-old problem of providing the most completely livable sort of home at the lowest practical cost.

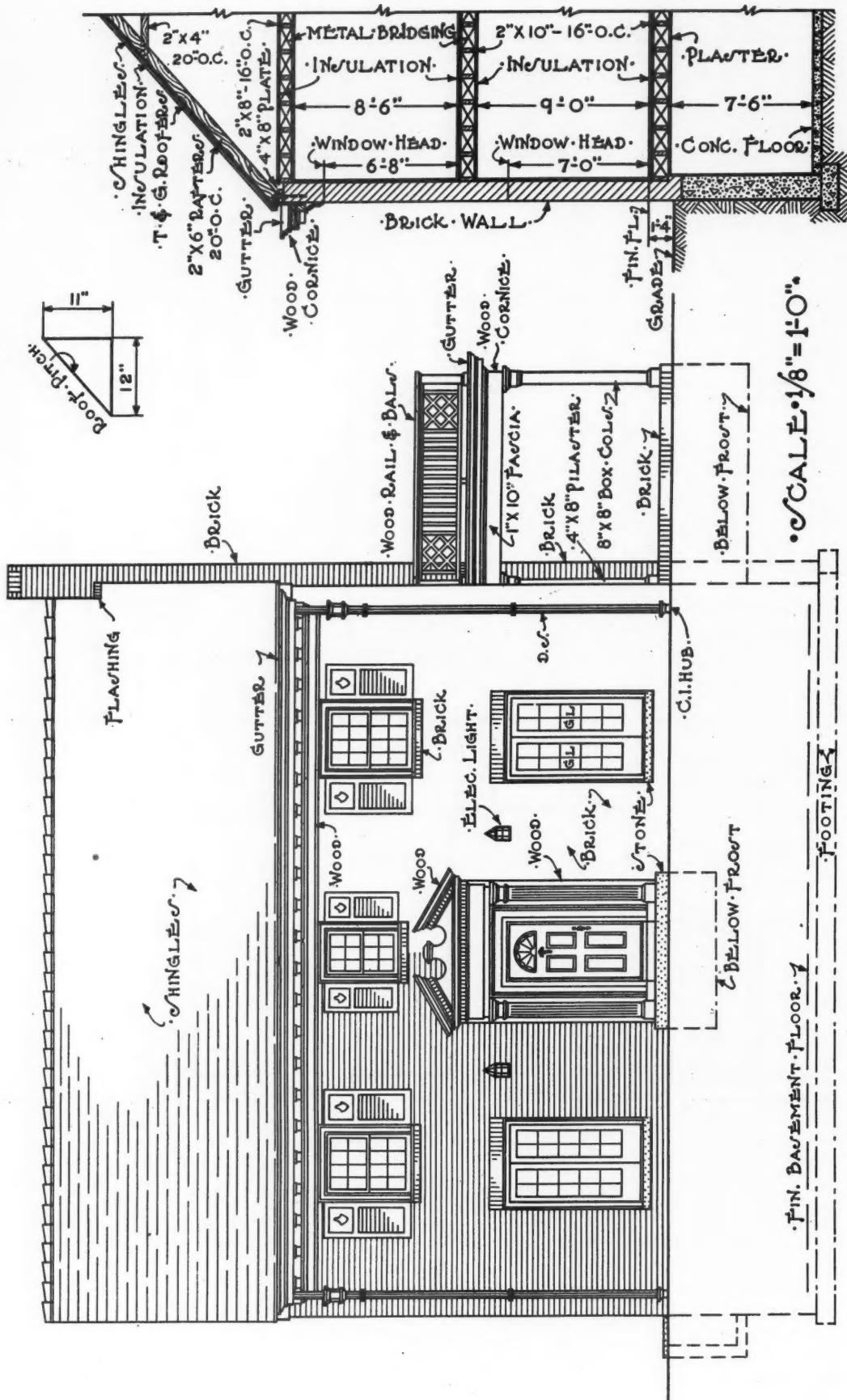
The Colonial type is notably economical of space and in the "House of the Month" all available space is utilized in a practical and pleasing manner. Every inch of excavated basement, every corner of the upper floors has been put to use to provide that maximum of living comfort which is demanded by the American family of today and full advantage is taken of the multitude of labor saving equipment which has been developed by progressive manufacturers. A careful examination of these plans will disclose much of interest.

WORKING DRAWINGS OF THIS HOME ON THE NEXT FOUR PAGES

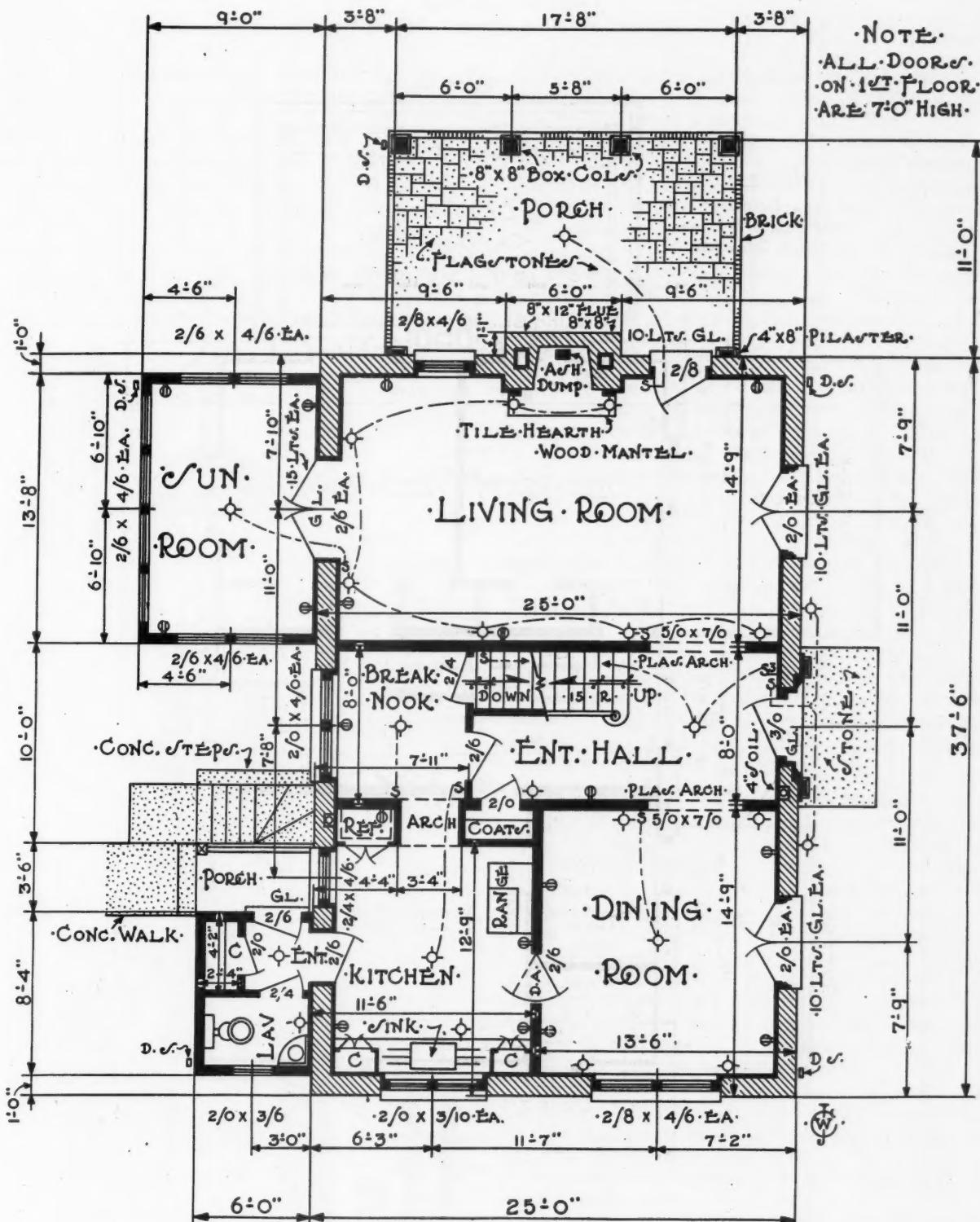


• BASEMENT • PLAN •

The Basement of the July "House of the Month" Is Excavated Only Under the Main Portion of the House and the Entire Space Is Equipped for Use.



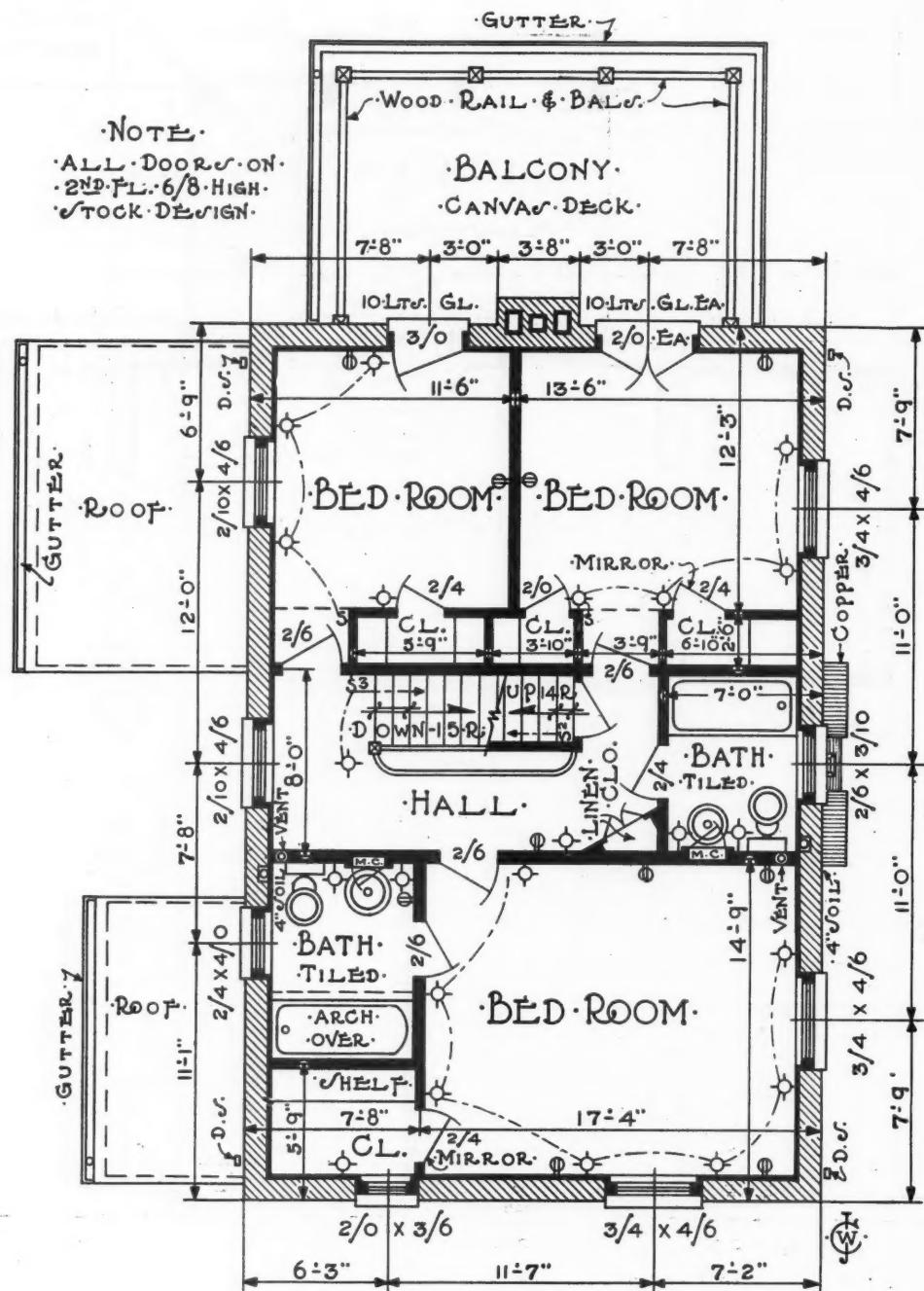
This Front Elevation Is an Excellent Example of the Importance of the Entrance in a Colonial Design, Both as the Center of Interest and the Chief Feature of Ornament.



• FIRST • FLOOR • PLAN •

•SCALE• 1/8" = 1'-0"•

A Large Living Room with a Fireplace, a Sun Room, and an Open Porch with Flagstone Floor Offer Assurance of Comfort at Any Season and in Any Weather.



•SECOND• FLOOR• PLAN•
•SCALE• 1/8"=1'-0".

Two Baths Are Rapidly Coming to Be Considered Essential to Any Home Even Though It Is a Simple One of Six Rooms Like This July "House of the Month."

Fact Finding In the Building Field

By E. L. GILBERT

Research Director, American Builder and Building Age

ATE one afternoon about three months ago, the ceaseless hum of a tri-motored plane came steadily to the ears of many residents of the state of Ohio as the big passenger airplane traveled cross country toward Chicago. At the same time a Boston express was speeding through New England, a 1931 automobile was making its way over the straight concrete roads of the Carolinas, and half a dozen cities scattered from Wisconsin to Florida knew the presence of strangers. The airplane, the fast train, and the automobile all carried special research men whose sole business was to gather facts about the building field; the cities men-

tioned were being combed for facts by other research men following the same quest. A national survey of the building field was under way.

Surveys of the building field seem to have become very popular during the last few years, especially since the sales volume for certain building products started to decline about eighteen months ago. When sales fell off, a sudden impatient curiosity developed; sales managers and advertising men manifested a keen interest in building field facts, the psychology of the men who buy building field products, etc. As a first source of authoritative information the merchandisers of building field products looked to the publishers of building publications; not for many years have these publishers had so many requests for detailed information and special data regarding architects, builders, dealers and present or prospective owners, as well as the usual statistics.

The Research and Marketing Division of AMERICAN BUILDER AND BUILDING AGE, for instance, was called upon time after time to conduct special surveys for manufacturers who wished to know how the active men of the building field thought of their products, what suggestions builders and dealers might offer to help increase sales, etc. Architects, builders and dealers cooperated handsomely both by mail and in person in the furnishing of up-to-date marketing facts.

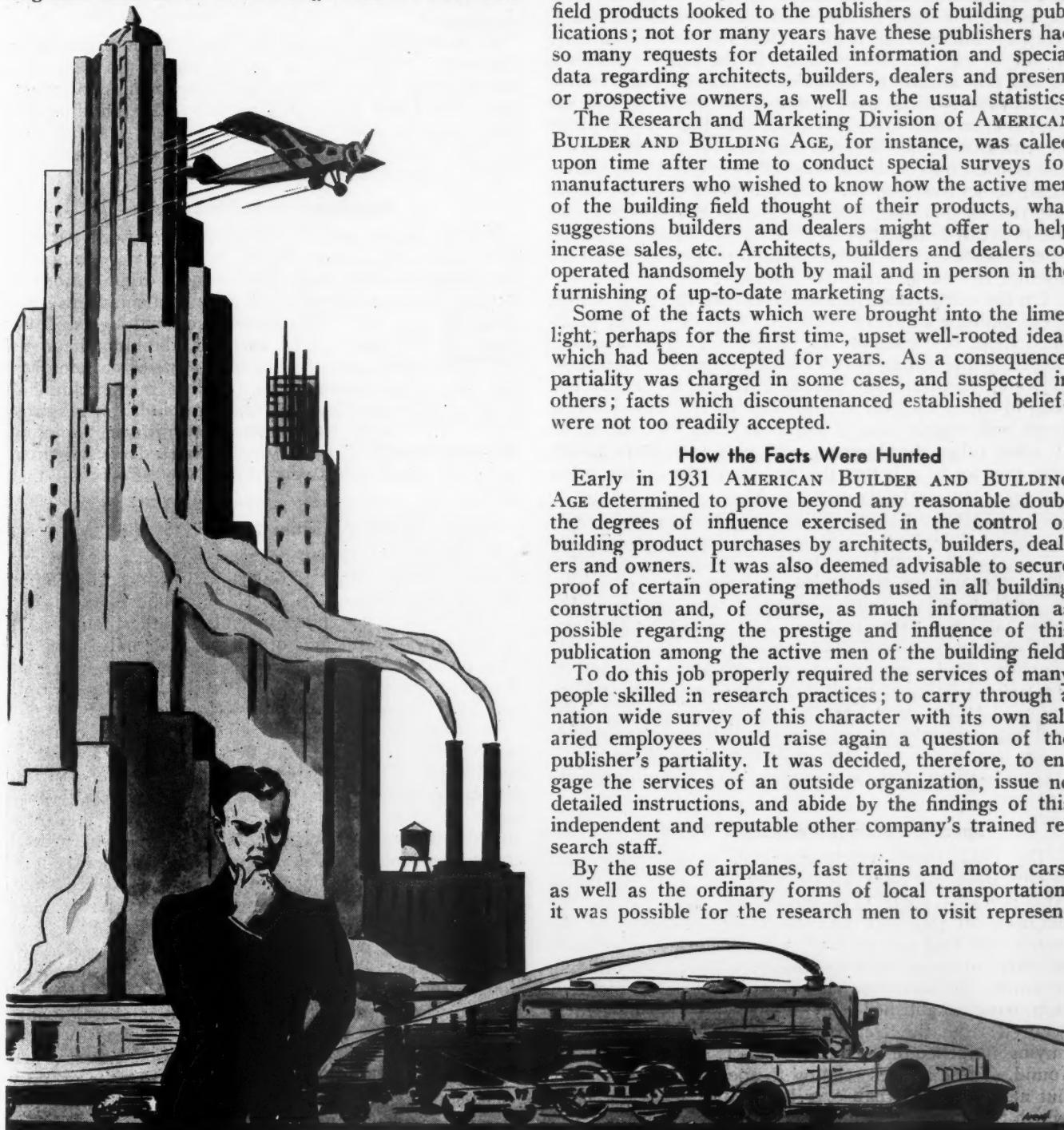
Some of the facts which were brought into the lime-light; perhaps for the first time, upset well-rooted ideas which had been accepted for years. As a consequence, partiality was charged in some cases, and suspected in others; facts which discountenanced established beliefs were not too readily accepted.

How the Facts Were Hunted

Early in 1931 AMERICAN BUILDER AND BUILDING AGE determined to prove beyond any reasonable doubt the degrees of influence exercised in the control of building product purchases by architects, builders, dealers and owners. It was also deemed advisable to secure proof of certain operating methods used in all building construction and, of course, as much information as possible regarding the prestige and influence of this publication among the active men of the building field.

To do this job properly required the services of many people skilled in research practices; to carry through a nation wide survey of this character with its own salaried employees would raise again a question of the publisher's partiality. It was decided, therefore, to engage the services of an outside organization, issue no detailed instructions, and abide by the findings of this independent and reputable other company's trained research staff.

By the use of airplanes, fast trains and motor cars, as well as the ordinary forms of local transportation, it was possible for the research men to visit represen-



RESEARCH STUDY AND SURVEY CHART MARKET TRENDS

tative sections in practically every part of the country east of the Rockies. Many thousands of letters were sent to architects, builders and dealers in addition, including the far western states. The unvarnished story which is contained in the complete report of this survey presents authentic 1931 facts which have already proven of tremendous value to many manufacturers; incidentally, this independent investigation, conducted without a single mention of the AMERICAN BUILDER AND BUILDING AGE name, has borne out in practically every particular the earlier findings of this publication's own Research and Marketing Division.

Value of Survey to the Building Industry

This new data is of incalculable value to the entire building industry. It is important for the manufacturers of building field products to know whether it is necessary for them to send their salesmen to the architect, the builder, the dealer AND the owner—or only to one or two of these people. If the builder wields a 75 per cent control of the selection and purchase of the actual brands to be used in the work which he guarantees, the manufacturer and other building field product merchandisers should know this fact. If a certain product is used only in architecturally designed and supervised structures, and the architect alone controls brand selection in this case, that fact also should be known by the interested manufacturer. It is far easier to adjust sales policies to a given situation, usually, than to attempt to change an entire industry.

On the other hand, you men who are carrying on this great building industry want to know about new products, about new uses for old products, and about manufacturing and selling policies which affect your business. If some manufacturer develops a product which will help to lower the cost of building, or if a new packing form will enable you to purchase with less waste, or if some other development will give you more profit, help you to do a better job or assist you in any other manner—you certainly want to know. By revealing to manufacturers just how important the builder is, more efficient distribution methods will be worked out and placed in operation by many manufacturers; similarly, the importance of the dealer, as revealed by this kind of survey, will produce better results for both the dealer and the manufacturer. The architect's position, in that type of construction where he is active, will also operate to improve general marketing tactics on the part of building product manufacturers, when they know. Careful, well thought out investigations of the building field perform a service which is very valuable to the men in the field, the publishers of building industry publications, and the merchandisers of building field products.

Specific Findings Particularly Valuable

The 1931 survey which was made by an independent organization for AMERICAN BUILDER AND BUILDING AGE revealed some very interesting facts. From the hundreds of pages of data which were collected by the men in the field and by mail, a detailed study was made of each of some seventy different types of building products. In each case the usual channels of distribution were established; the annual production figures secured from the Department of Commerce; and the buying influence of architect, builder, dealer and owner found. These studies relating to specific products bring out more strongly than ever before the important parts which the builder and dealer play in regard to the selec-

tion of actual brand names of almost every type of product.

Some of the facts brought out by this particular survey have long been known, but never before quite so clearly proved. Over 80 per cent of the builders reached, for instance, sublet their plumbing and heating work; yet a vast majority of these builders definitely control brand selection of the plumbing fixtures which are used in their work. Similarly, it was shown that for one out of every four jobs the builder definitely determines what brand of boiler or furnace shall be used. Whereas there has been some feeling among advertising men to the effect that carpenters are not very important people, this survey shows that more than 70 per cent of all the builders reached were at one time carpenters! A lot of antique ideas, in other words, have been examined and proved to be resting on false premises.

In making this survey the independent organization obtained its own lists of names and in no case were the traveling research men given any names to investigate. The result has been a picture of the building field based entirely upon the facts discovered, a sound commercial research which presents many new aspects of a complex and intricate industry.

Importance of Builders Shown

Ninety-six per cent of the builders reached guarantee their work, this survey shows. It is certainly important for manufacturers and their selling organizations to consider the possible effect if a builder should say to a prospective owner: "I'll guarantee everything BUT this particular product." The fact that builders have not been thoroughly convinced of the merits of certain products has often lowered the possible sales volume of those products in the past; this new light on a subject about which there have been many differing opinions, will undoubtedly aid many sales and advertising managers to more effectively direct the efforts of their staffs.

Dealer Activities Carefully Studied

In regard to dealers there were current a few months ago apparently authentic reports of a widespread movement among lumber dealers to build houses themselves and eliminate the contractors. Out of the thousands of dealers interviewed and questioned, only three per cent reported that they were building homes for sale. Ninety-seven per cent of the dealers, in other words, are NOT doing any speculative building.

In answer to the question: "Do you finance construction?" 28 per cent of the dealers said "Yes" and 72 per cent "No." Fifty-five per cent of the dealers furnish plans and 49 per cent furnish specifications. Twenty-eight per cent of the dealers reported that they offer an architectural service, but only 16 per cent make a charge for this service. Incidentally, 66 per cent of the lumber and building supply dealers reached stated that they read AMERICAN BUILDER AND BUILDING AGE.

It was also found that lumber dealers have been improving their merchandising methods and have added to their stocks during the past few years such additional products as: builders' hardware, paint, floor and wall tile, steel sash, composition flooring, wall paper, refrigerators, gas ranges, etc. In dozens of towns the dealers are opening showrooms on Main Street where the prospective home owner may be shown the products for his new residence; perhaps this development was

(Continued to page 112)

Beauty — Economy — Service

Modern Building Materials Combine These Three Characteristics to Provide Quality in Modern Homes

AT a recent exhibit of new products, a wall finishing material, particularly suitable for bathrooms, kitchens and similar installations, and which combines a high degree of beauty and serviceability with real economy, was displayed. The production of this material is in line with a trend which is strikingly apparent to anyone who follows the development of new building materials. This important trend holds promise of ever increasing value, without increase of cost, in the homes of America.

Manufacturers, aided chiefly by the experimental work of chemists and engineers, are rapidly perfecting new materials or improving old materials to increase their beauty and length of service, to simplify their care and maintenance, and to reduce their cost, both as to original price and cost of application. The particular material already referred to is a development of the linoleum industry.

Permanently Colorful Wall Linoleum

A fairly heavy grade of linoleum is being offered in special colors which are particularly adapted to wall decoration. It is applied in the same manner that linoleum is applied to floors, with a special cement, which produces a smooth, practically one-piece surface which will not crack, bulge or loosen, and which is not injured by water. It is easily cleaned no matter how it may become soiled, and the applied cost, it is stated, is less for covering the entire wall surface of a room than that of ceramic tile applied to a height of only three feet on the wall.

Its application presents no difficulties to the mechanic

For further information on any of the products mentioned on these pages write American Builder and Building Age, Information Exchange, 105 W. Adams St., Chicago.

who is familiar with the application of linoleum and, once properly applied, it is a permanent finish and decoration. It can be applied directly over old walls, even though badly cracked, without costly preparatory work, and so should be widely available in remodeling of old homes.

In the exhibit, this material was shown installed in two model rooms. One of these was a full sized, modern bathroom of the de luxe type. The walls were covered with an artistic jade green material which, with the black linoleum floor covering, delicate green fixtures and chromium fittings, produced a highly artistic, modern effect.

The other room was a combination kitchen and dinette of the type found in the homes of families of moderate income. The walls were covered, from floor to ceiling, with a richly tinted, golden onyx material. On the floor, linoleum, laid in large tiles of apple green, jade, rose and tan, set off with a black marbelized border, and red border strip, added an unusual touch and earned favorable comment from many visitors. The table tops and other working surfaces in this room were of linoleum which was at once colorful and easily cleaned.

White Metal for Kitchen Sinks

The chromium fittings, used in the model bathroom in this exhibit, are in line with the trend toward white metals which has been conspicuous of late. White metals of various kinds have won great favor for their decorative value, which is not affected by time because these metals do not rust.

One of the widely used white metals is the alloy known as monel metal. It has now been adopted for kitchen sinks.



The New Linoleum Wall Coverings, as Exhibited in This Model Bathroom and Dinette-Kitchenette Unit, Provide a Permanent and Beautiful Decoration Which Are Easily Cleaned and Can Be Installed at Comparatively Low Cost.

NEWER AND BETTER MATERIALS HELP THE BUILDER PROFIT



These sinks are beautifully designed with flowing curves and, being stamped from a single sheet of metal, all cracks, crevices and sharp angles are eliminated. The roll around the apron has been reduced to $\frac{1}{2}$ inch, affording a larger working space on the drainboard.

The silvery satin finish of these sinks harmonizes with any color scheme and the monel metal is proof against rust, and resistant to all ordinary forms of corrosion, including the action of fruit juices and other acids. The hard close grain finish is not easily dented and it can be cleaned with the ordinary household abrasives without harm. These sinks are produced in six sizes to meet varying space requirements and are supplied at a price within a narrow margin of the present standard types of sink.

Synthetic Wall Paneling

While the linoleum wall covering was being perfected, another industry was putting the finishing touches on a



Right: Resinous Material, Veneered on Wallboard, with a Wood Grain Finish Makes Wall Paneling Available at a Fraction of the Cost of Wood Panels. Below: Kitchen Sinks, Stamped from a Single Sheet of Monel Metal, Have No Cracks or Crevices, Do Not Rust, and Are Not Affected by Acids.



wall material of entirely different nature, but possessing a number of similar characteristics. Synthetic resinous materials, of the bakelite family, are already familiar to most people. They have been used extensively in the electrical industry and even for radio cabinets.

Probably the latter use, with its perfection of wood grain finishes, suggested the use of this material for wall covering. At any rate, the manufacturers selected a suitable core material, developed a satisfactory, waterproof glue, and applied a thin veneer of the resinous material to the wallboard core. The result is a panel which can be produced, so the manufacturers state, at a fraction of the cost of wood paneling.

Perfectly matched panels can be produced, and the surface is so hard that it is not subject to marring. Nor is it affected by water. In fact, it can be washed with soap and water as frequently as necessary and still retain its beautiful finish.

Wrought Iron Becomes Popular

Another metal which is winning wide popularity is wrought iron, which is now being used extensively for both exterior and interior work on houses and other buildings. The origin of wrought iron work was utilitarian, dating back to its use for defensive purposes during the middle ages. The early craftsmen soon learned to improve the appearance of their work and, by hammering, twisting and scrolling, make it artistically decorative as well as useful.

Now, modern designers have rediscovered the value of such treatment and wrought iron has again come into its



Wrought Ironwork, for Doorways, Railing, and Balconies is in Favor, Wherever Fine Architectural Effects Are Appreciated.

BY PRODUCING BETTER HOMES TO SELL AT LOWER PRICES

For further information on any of the products mentioned on these pages write American Builder and Building Age, Information Exchange, 105 W. Adams St., Chicago.

own. It is appropriately used with many types of architecture and is especially in taste with the popular English and Spanish styles.

Stair and balcony railings, both exterior and interior are excellent, and gates or grilles are effective in breaking the severity of arched openings. Ironwork is especially valuable in relieving the monotony of stucco exteriors and all its inherent beauty is being brought out by the excellent designing of modern American manufacturers.

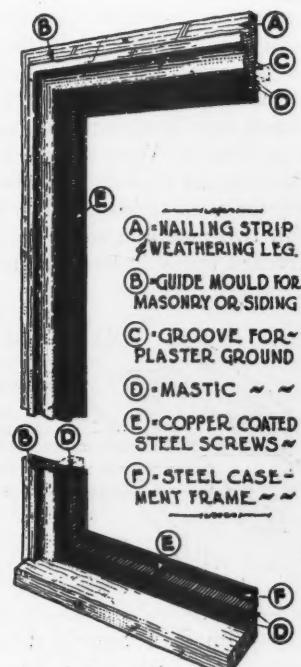
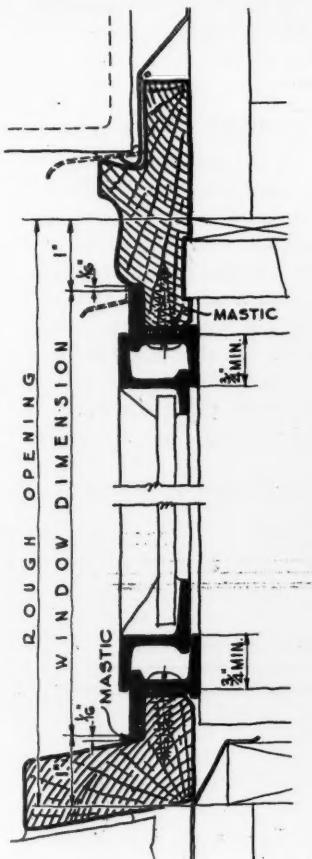
Asbestos Shingles Cost Reduced

The desirability of asbestos shingles has long been recognized but distributors report that the greatest difficulty in selling such roofs has always been their cost. This objection has been largely overcome, and asbestos shingle roofs have been made available for more moderate priced homes, by the perfection of a new type of shingle and method of laying.

The illustration shows a workman applying these shingles. They are large units requiring only 68 shingles to the square, and therefore are fast laying. But the size is only one of the time saving factors. A self-aligning feature does away with chalk lines and a clincher device solves the storm anchor problem in a simple manner.

This clincher is an ingenious affair, but as simple to use as a safety pin. The clincher is merely slipped into place and tapped with the hammer. Where formerly it was necessary to anchor each shingle as applied, now whole courses, or even whole roofs can be anchored in one operation.

One of the first contractors to use the new shingles and clinchers reported that he was able to use them at an applied price of less than \$15.00 per square.



Fine Asbestos Shingle Roofs Have Been Made Inexpensive by an Anchoring Device Which Reduces the Cost of Application.

Steel Casements Improved

An improved product, which reduces time and cost of construction, has also been announced by one of the manufacturers of steel casements. This company's casements are now being offered complete with wood trim, already fitted and securely attached with copper coated screws, in a bed of mastic.

Installation of this window assembly requires only the time of setting the unit in place and plumbing it. Cutting and fitting of trim on the job are eliminated. The steel swing leaves are factory fitted, and hinged, and hung in the steel casement frame and all steel receives a priming coat before being shipped.

Building paper extends over the leg of the wood surround to make a snug, tight installation. In masonry walls, the surround gives the mason a liner for laying up the brick or stone; and there are slots in the backs of the surrounds to receive and accurately locate plaster grounds. California redwood was selected as the material for these surrounds because of its durability even when unpainted.

Steel Casement Windows Are Now Delivered Set in Redwood Surrounds Which Make a Better Job with Less Expense for Labor.



Practical Job Pointers

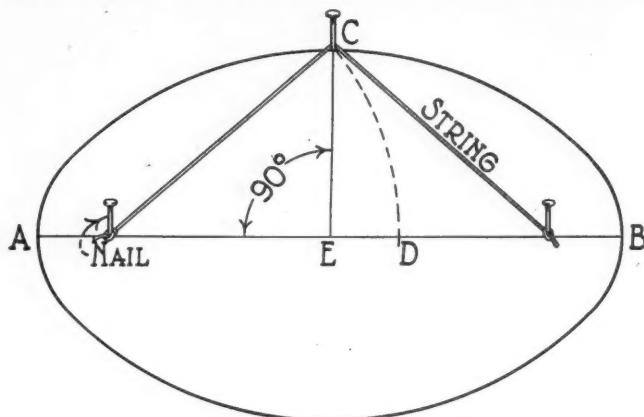
Laying Out an Ellipse

To lay out an ellipse of any size, first draw a horizontal line A-B, equal in length to the long dimension of the desired ellipse. Next draw a line E-C, at right angles to the horizontal line and of a length equal to half the width of the desired ellipse.

Set the compass for the distance A

to C and describe an arc D, using A as a center. Now set the compass for the distance D to E and set off the distance along the line from A and also from B. Drive small nails at these points and also at C. Tie a string to the first two nails passing it around the nail at C, as shown in the sketch.

Pull out the nail at C and put a pencil against the loop of the string and, keeping the string taut, run the pencil around.



Here is a Simple Way to Lay Out an Ellipse Without Instruments.

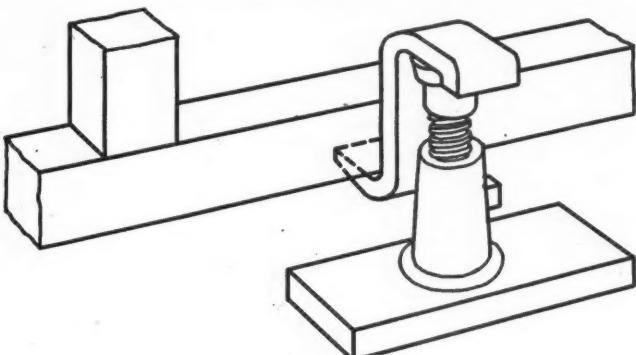
I have used this many times for such work as marking the cut for putting 4-inch soil pipe through a half pitch roof which requires an elliptical hole 4 by $5\frac{1}{3}$ inches.

CHARLES C. ORR, R. R. No. 1, Thurman, Iowa.

Jacking Up Low Beams

THE idea shown in the sketch is quite simple but has proved valuable on both old and new construction work for adapting the screw jack to the particular job in hand. A piece of steel formed as shown makes it possible to get the lift of the jack under beams which are too low to admit the jack itself. Any blacksmith can make a set of the adapters from $\frac{3}{4}$ by 4-inch bar stock, or heavier, according to need.

CHAS. H. WILLEY, Box 73, Concord, N. H.



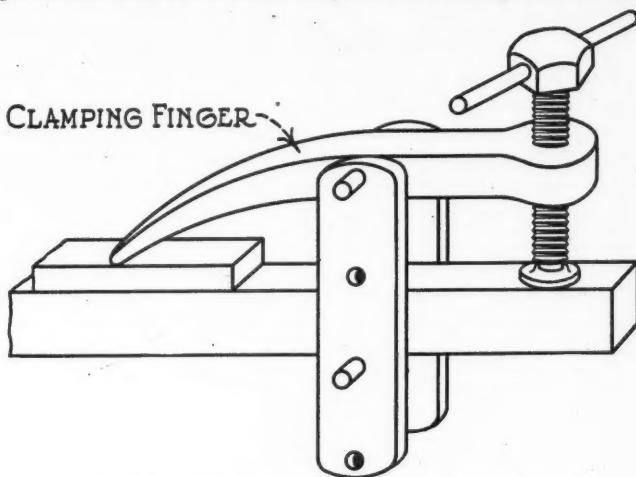
A Jack Adapter Which Makes It Possible to Get Under Low Places.

A Readers' Exchange of Tested Ideas and Methods, Taken from Their Own Building Experience. Two Dollars Will Be Paid for Each Contribution Published in This Department.

A Wood Worker's Clamp

Often a carpenter or wood worker has considerable use for a clamp to hold long pieces of wood together securely. Such a clamp can be easily made according to the design shown in the sketch. I call this a slip on clamp because it slips over the two pieces that are to be clamped together.

The clamping finger is drilled and tapped for a screw at the end and also drilled for the side pins. The upright side pieces are drilled for the side pins in several places so that



Long Pieces Are Easily Clamped Together by Means of This Device.

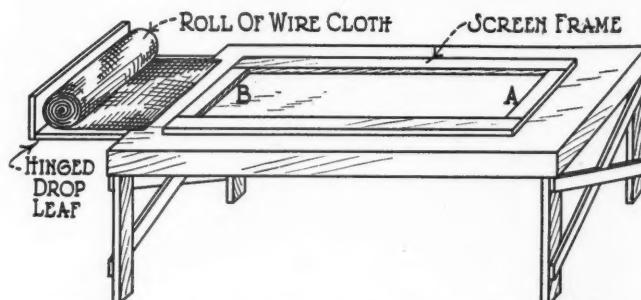
the pins can be placed to give any desired width of opening. Workmen will find that clamps of this type will work satisfactorily on jobs that formerly offered a real problem.

CHAS. H. WILLEY, Box 73, Concord, N. H.

For Stretching Screen Wire

ON a recent job which involved the nailing of wire screen cloth to 500 screen frames, the work was simplified and better done, with less labor and expense, by using a special work bench as shown in the sketch. The loose end of the roll of screen wire was tacked to the screen frame at A. It was then unrolled till the roll rested against the stop on the hinged drop leaf, with the leaf in the horizontal position, as in the sketch. With the roll held fast in this position the leaf was dropped drawing the wire tight across the screen frame and the wire tacked around the frame. This rig works best with two men and when so used will turn out a completely screened frame in five minutes.

ELDRED SMITH, Modena, N. Y.



With This Special Bench Two Men Put Wire Cloth Into a Screen in Five Minutes.

A Safety Kink



WHEN using a long ladder in building construction, it should, of course, be supported so that it can not buckle and cause an accident. The illustration shows a 40-foot ladder in use on a building job. This is a "made on the job" ladder but is so well braced that it is entirely safe and practical. At the same time the bracing is simple and can be applied to such ladders anywhere without inconvenience.

A. B. BARKER,
New York City

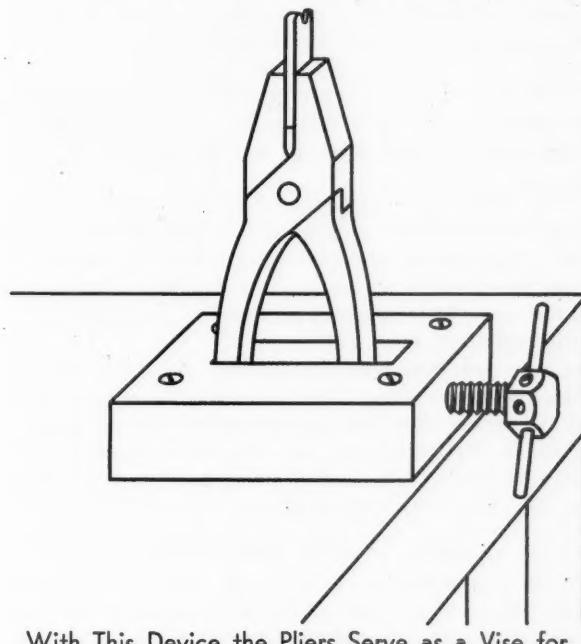
Even a "Made on the Job" Ladder Is Perfectly Safe If Properly Braced.

Plier Vise for Small Work

T is often necessary, when working at a bench, to hold a small, thin part for filing or other work and the ordinary bench vise is too large and awkward for such work. The sketch shows a simple bench attachment with which the ordinary pliers are used to handle this kind of small work.

The block can be made of either hardwood or iron. It is slotted to allow the pliers to be set into it vertically, as shown, and permit them to open sufficiently to receive the piece to be worked on. Rigid clamping is obtained by the screw fed against the handle of the pliers.

CHAS. H. WILLEY, Box 73, Concord, N. H.



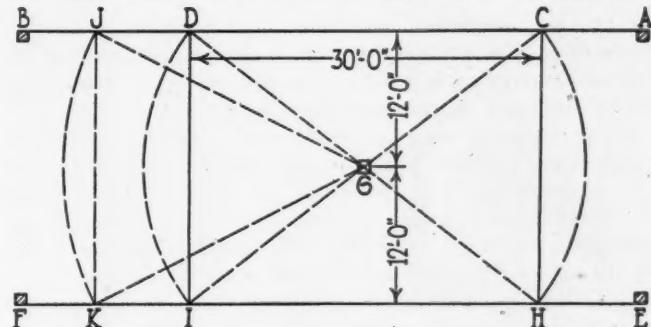
With This Device the Pliers Serve as a Vise for Holding Thin Pieces.

Squaring With the Steel Tape

T is possible to square off a plot with the steel tape by the following method, which is illustrated in the diagram. Begin by stretching a line from A to B on the established

building line. Assuming that the building is to be 24 by 30 feet, stretch another line parallel to A-B and 24 feet from it between the points E and F.

Next establish the corner indicated at C and from this measure off 30 feet to the point D. At any convenient point half way between A-B and E-F, drive a stake G. On top of this stake drive a nail so that it will be exactly 12 feet from each line, A-B and E-F. We are now ready for squaring.



The Building Foundation Squared With a Steel Tape Only.

Hook the ring of the steel tape over the nail in the stake G and, taking the distance from G to C, establish the point H on the line E-F the same distance from G that C is. Next take the distance from G to D and establish the point I in the same way. Lines between C and H, and between D and I complete the four sides of the building.

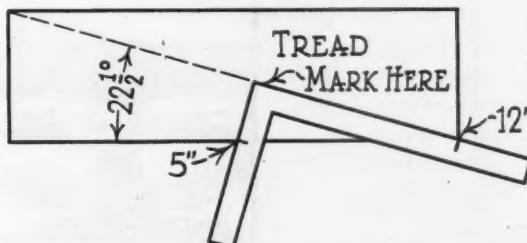
Though the stake G should be placed about half way between the end lines C-H and D-I this is not absolutely necessary as shown by the points J and K substituted for D and I, using C-J as the length of the building instead of C-D.

H. H. SIEGLE, Emporia, Kan.

Laying Out Winding Treads

THE method I use for figuring winding stair treads is much shorter than the usual way. Suppose four treads are put in at the turn in the stair. Each tread angle should be $22\frac{1}{2}$ degrees. By using the numbers 12 and 5 on the steel

NO. OF TREADS	SIZE OF ANGLE	NOS. TO USE ON THE SQUARE
2	45°	12": 12"
3	30°	12 : 6 $\frac{15}{16}$ "
4	22½°	12": 5"
5	18°	12": 3 $\frac{15}{16}$ "
6	15°	12": 3 $\frac{1}{4}$ "



With This Table and a Steel Square Treads for Winding Stairs Are Readily Laid Out.

square you can get $22\frac{1}{2}$ degrees, as shown in the sketch. Then it is a simple matter to mark off the tread, cut it, and then cut it to length. The table shows the numbers on the square to use for various common numbers of treads.

JAKE VANDER MUELEN, Route 1, Box 229, Berwyn, Ill.

When Buying Job Equipment

There Is a Wide Variety of Highly Perfected Items from Which to Select According to Need

In buying contractors' equipment, the problem is one of selection. For any one item there are usually a number of manufacturers each making one or more types, sizes, and grades, designed to meet varying requirements.

Unlike building materials, contractors' equipment is not bought over and over, a new purchase for every job, but only periodically. The contractor or builder does not feel the day to day pressure to keep always fully informed on available products. When the time comes to buy he wants all the necessary information to be readily available.

It is not particularly difficult to obtain this information when needed. The advertising pages of the AMERICAN BUILDER AND BUILDING AGE furnish the names of the leading manufacturers in each line. These manufacturers are always glad to send literature and other information to aid in the selection.

This department, if carefully saved, is also of assistance. It provides a record of the newest developments in the equipment field as they appear from month to month. There is never a month that some new product, or some improvement on an old product is not announced.

Transit and Level Combined

Among these new products which have recently been offered to the builder, one of the most striking is a combination transit and level the design of which is based on a new principle. While this instrument embodies a number of improvements over the old style convertible level, the most important is the simple method by which the change from level to transit position is accomplished.

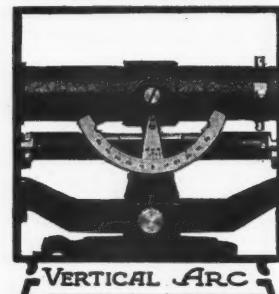
To convert the instrument for use as a transit, it is only necessary to loosen two large nuts on the level bar, a matter of seconds, and then swing the telescope on its fixed, rotat-



NO LIFTING FROM WYES



NO PARTS TO REMOVE



VERTICAL ARC

Three of the Advantages Claimed for a New Type of Combination Level and Transit Based on a New Principle.

ing standard ready for use. The nuts mentioned do not come off, there is no lifting of the telescope from the wyes, and there are no loose or extra parts to get lost.

This instrument is equipped with a vertical arc with a vernier reading to five minutes and also a clamp and tangent screw for vertical movement. The horizontal circle is protected by an aluminum guard and it is also equipped with

a large aluminum base. The whole instrument is sturdy built and will stay in adjustment under the most severe conditions. In addition to all this it is offered for purchase on liberal monthly terms.

Tilting Arbor Saw Bench

Saws are an item which is constantly subject to improvement. Recently two new ones, of entirely different types, have been announced by established manufacturers. One of



The Table of This Saw Is Movable and the Saw May Be Tilted to 45 Degrees.

these is a tilting arbor saw bench, of sturdy, compact construction with the motor built in and completely self-contained.

The right hand table of this machine is fixed, but the left hand table may be moved from the saw far enough to use a dado saw, or it may be slid out entirely, allowing free access to the saw. It may be locked in any position by means of two hand nuts. A ripping gauge may be used on either side of the saw.

The cut-off gauge may be set either side of the saw at an angle up to 60 degrees in either direction by means of graduations. The saw is mounted directly on the motor arbor and may be tilted to an angle of 45 degrees to the vertical, by means of a hand wheel and screw. The degree of the angle is registered on a scale.

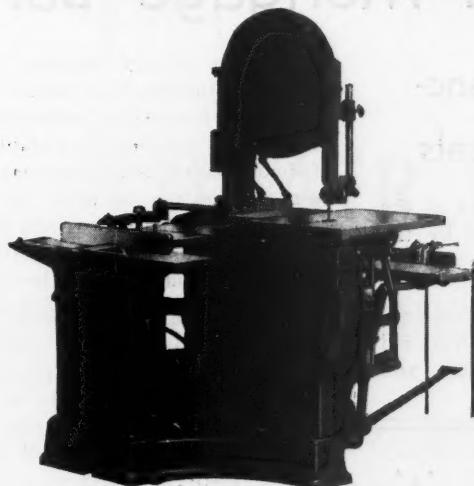
The saw may be lowered beneath the table or raised through the table, when in any position, by means of hand wheel and screw. By using the graduated cut-off gauge and the scale of the tilting saw, any desired compound angular cut may be made. The stock during this operation is supported by a perfectly level table.

New Universal Woodworker

The other machine is a universal type of woodworker suitable for a wide range of work in small woodworking shops. It may be had with motors to operate from a lamp socket, making it convenient to use in small shops without special power provision. It is so well built, and of sufficient capacity, however, to make it desirable for use in small lumber yards and by building contractors.

This machine is delivered all wired up ready to connect with the electric current and start operation. The complete machine consists of a 20-inch band saw, shaper, 6 or 8-inch

jointer, saw table with tilting top, and borer with hollow chisel mortiser. The various units are substantially mounted

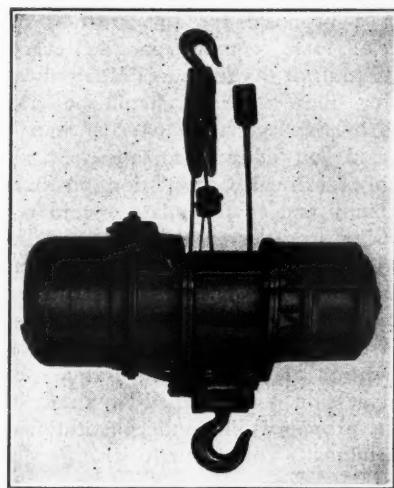


A Complete Woodworking Machine for Shop or Lumber Yard or for the Contractor.

on a sturdy base which insures steady running and convenient operation. The band saw and shaper may be left off at the time of purchase and added later, if desired, as the base is drilled to receive these units at any time.

Fast New Electric Hoist

On many types of building, hoisting equipment is of great importance as the time and labor required for delivering materials to the upper stories is a considerable item of cost. For this reason one manufacturer has brought out an electric hoist designed to operate at high speed but with low maintenance cost.



Economy and Efficiency of Operation Has Been Attained in this Hoist.

drop forged, heat-treated gears and preformed cable.

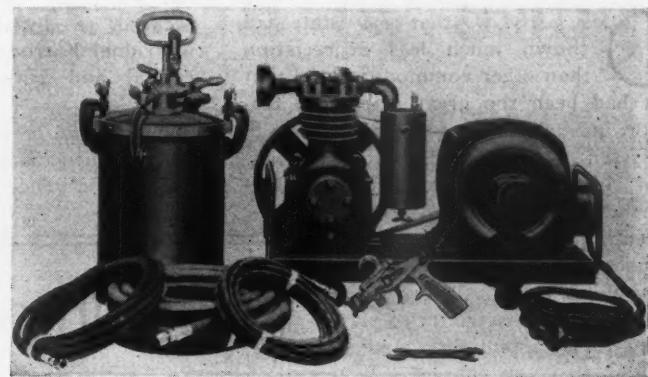
A Practical One-Man Spray Paint Unit

The practical economy, as well as the superior quality of work, obtained by using spray painting equipment has long since been proved beyond all question of doubt. The growing demand for this equipment, which has resulted, has produced a great volume of development work on the part of manufacturers. One of the newest units is a complete outfit designed for operation by one man.

This outfit is electrically operated and is of light but durable construction. It can be transported from place to place

in an ordinary automobile, and is easily carried by one man. The unit will handle comparatively extensive work in all types of buildings, including the finishing of interiors.

The outfit consists of a $\frac{1}{2}$ h.p., electric motor driven, compressing equipment, mounted on a caster base; one pressure-feed spray gun with wrench; one two-gallon pressure-feed paint tank; one 20-foot length of $\frac{1}{8}$ -inch air hose and connections; one 12-foot, $\frac{1}{4}$ -inch, braid covered hose and con-



One Man Operation Is Possible with This New and Efficient Spray Paint Outfit.

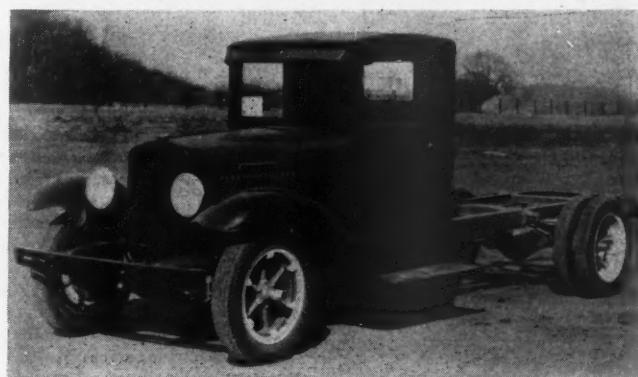
nnections; and one 12-foot length of $\frac{1}{8}$ -inch fluid hose and connections.

Improved Motor Transportation

Rapid, low cost transportation is a vital factor in present day construction work so the choice of the right motor truck receives careful consideration from the wise builder. Truck manufacturers are constantly improving their product and bringing out new models better suited to the service they are required to render. Two new $1\frac{1}{2}$ -ton models are the latest contribution from one company.

One of these models is built in two wheelbases, 136 and 160 inches. The body allowance is 1,200 pounds and the maximum load, body and pay load, is 4,200 pounds, in either wheelbase. For dump truck service the capacity is increased, however, to 4,575 pounds on the 136-inch wheelbase.

The other model is built in 136-inch wheelbase only and has the same capacity as the first model. The two models employ the same units throughout except for rear axles and transmissions. In the first model the rear axle is of the single-speed, spiral-bevel drive type and a four-speed transmission with one reverse is used. In the second model, a two-speed axle, which, coupled with the three speeds of the transmission, provides six forward speeds and two reverse speeds, is used.



A New $1\frac{1}{2}$ -Ton Truck Which Is Suited to Construction Work of All Kinds.

Realtors Endorse Federal Mortgage Bank

Baltimore Convention Studies Home Financing, Tax Reduction and Certified Appraisals

DECLARING that real estate had shown much less depreciation than other commodities and that it had been the great stabilizing factor in the past two years, Harry S. Kissell of Springfield, Ohio, President of the National Association of Real Estate Boards, opened the convention of that body at Baltimore on May 27th with a stimulating appeal to realtors throughout the country to stand by their commodity and to show that the charge of non-liquidity made against real estate is not justified.

"I appeal to the bankers of the country, most of whom recognize the great part construction must play in the return of prosperity, to use their influence that real estate values may not be minimized," said Mr. Kissell. "We do not suggest that they overloan on real estate securities, but that they see that real estate is not discriminated against."

The Need for Mortgage Money

Recognizing the need for money to finance homes throughout the country on a long-term basis, the directors of the association brought to the convention floor a resolution proposing immediate study of a central mortgage system for discounting mortgage paper through central banks with the object of making long term and short term credits for home financing more readily available. The convention voted to authorize President Kissell to appoint five realtors to confer with governmental authorities in an investigation of proposals looking toward the establishment of a central mortgage system.

One possibility for such a system was outlined at the convention by Professor Nadler of New York University who spoke on the subject of: "Mortgage Banks Abroad and Their Lessons for Us." (The main body of Professor Nadler's address is reproduced elsewhere in this issue.) He suggested the establishment of a central urban mortgage discount corporation through which mortgage paper from existing institutions such as savings banks, insurance companies, building and loan associations, and mortgage corporations could be discounted. On the basis of the mortgages, the central mortgage discount corporation could issue its own bonds which would be

secured: (a) by the mortgages of the individual borrowers, and (b) by the capital and surplus of the central bank.

A proposal to request the President of the United States to call a National Tax Conference was made and

might come through passing laws such as that in Indiana that permit any ten taxpayers to question budgetary items or it might require the establishment of flexible administrative areas so that cumbersome tax systems in federal, state, county, and city would give way to a unified tax system eliminating the necessity of innumerable levies.

"Everywhere there should be the most stubborn resistance against any increased or additional taxes of any kind until the costs of government are cut and our present outlays proportioned to their relative importance and necessity," said Judge Arthur J. Lacy of Detroit, before one of the general sessions of the convention.

As Chairman of the Property Owners' Division he spoke for the real estate owners organized as divisions of local real estate boards to carry out a program for tax modernization and for careful budgeting of governmental expenditures.

Judge Lacy outlined to the convention a proposal for the creation of special state commissions in every state to draft tax measures along eight major lines. "There should be created by the legislature of each state," he said, "an independent, non-political, highly qualified Commission directed to study and to formulate a comprehensive program of legislation on the subjects of state and local taxation, administration, finance, government structure and retrenchment of costs, and to draft and present for the consideration of the legislature at a special session to be called at an early date, proposed bills and constitutional amendments to effectuate it.

"In the meantime, it seems imperative that all dispensable outlays should for a time be suspended, and that there should be a holiday or half-holiday in new road building programs and other projects which it is possible to defer.

"If the people are to be rescued from excessive taxation and real estate relieved from the disproportionate burden now upon it, the people must develop in themselves the will to reduce the costs of government," he declared.

Proposals to Establish Institute of Real Estate Appraisers

Before the final session of the real estate convention, Philip W. Kniskern of New York City, outlined a proposal for the establishment of an

(Continued to page 86)

Building Activities

The Month's News of the Industry

adopted by the convention. It was proposed that federal, state, and local governments, together with representatives of tax payers, be asked to participate at this conference in order to devise means for co-ordinating the functional operations of the government and securing efficiency and economy in services performed.

This resolution was made and adopted following a rousing address by Professor Simeon E. Leland of the University of Chicago who stated that federal, state, county and city taxes had increased more than 600 per cent on the average in the past twenty-five years. Our percentage increase in taxes has been nearly three times as great as the percentage of increase in wealth, he pointed out, but looked for no general alleviation of tax burdens until the taxpayers become interested in government and analyze each expenditure. Progress in the future

THE FIGHTERS ARE WINNING!

This was the keynote struck by President Harry S. Kissell at the opening of the Twenty-fourth Annual Convention of the National Association of Real Estate Boards held in Baltimore on May 27-30. Hard-headed consideration of economic facts, plus a ready determination to win through to prosperity, marked a three-day session devoted to the study of home building and subdividing, appraising, financing, real estate brokerage, property management, co-operative apartments and industrial property. The representatives of American Builder and Building Age who attended the convention have made a summary in this article of those talks most interesting to our readers. You will find in it much that will be of value to you at this time.



CUT AIR LEAKAGE by using Andersen Frames

*New wide blind stop feature
reduces air leakage 53.4%*

To GET a leakproof window frame, use the new Andersen Master Frame with locked sill-joint and other patented features.

Engineers at the University of Wisconsin, after rigid tests, found that Andersen Frames with the wide blind stop cut air leakage 53.4 per cent, as compared with ordinary frames.

Builders are insisting on this new frame, with the new patented features. They can set one up in 6 minutes . . . saving on labor. They cut sash and fit trim at the bench . . . more time saved. And also, this frame is leakproof. No money for water damage repairs.

Remember, too, this frame saves on fuel bills . . . and that's a good talking point.

Andersen Frames now are made of genuine White Pine and also Ponderosa Pine with primed joints . . . in the size and type for every building requirement. Write us for a free demonstration.

Have you seen the new ANDERSEN MASTER WEATHERSTRIPS? A metal strip which cuts draft 86%; costs less than \$1 per set

THE ANDERSEN FRAME CORPORATION
Bayport, Minnesota

Andersen MASTER Frames

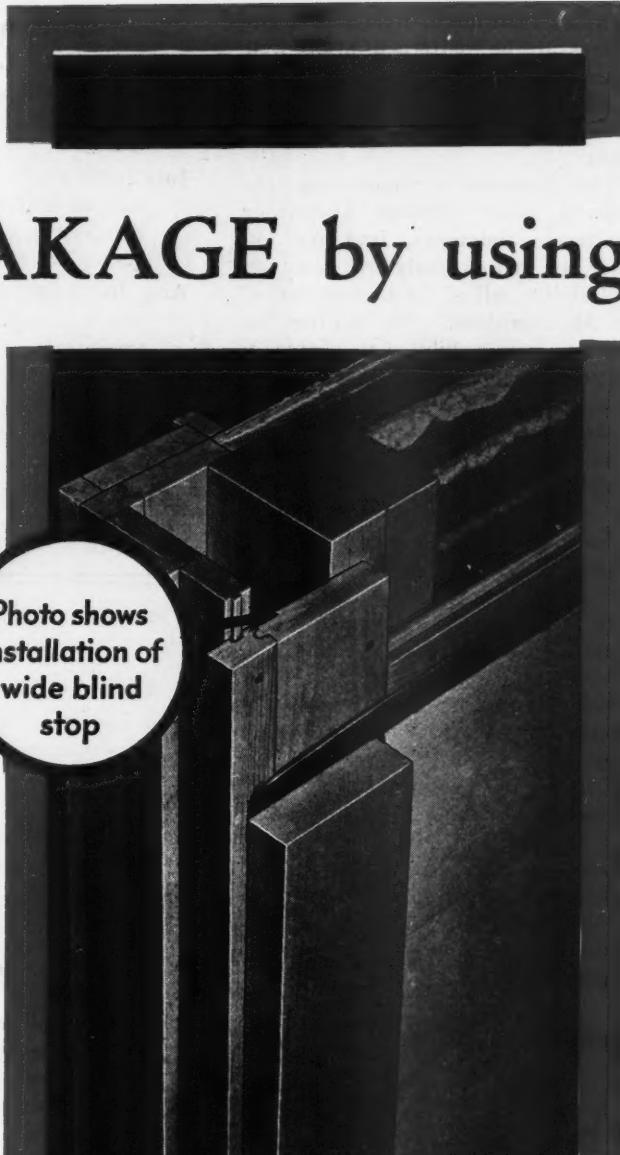


Photo shows
installation of
wide blind
stop

The use of the wide blind stop forms an airtight joining of frame and wall. Note how the building paper is run back under casing.



Typical installation of Andersen window and door frames. House built to sell by J. E. Butler, West Hartford, Conn.; frames furnished by Hartford Lumber Co., Hartford, Conn.

for a leakproof installation

American Institute of Real Estate Appraisers to be patterned after well-known institutes of professional men in other lines. The plan is feasible, practicable and advisable, he maintained.

"The business of appraising real property today requires knowledge, experience, judgment, integrity and honor, as well as analytical and technical ability—all of the highest order," said Mr. Kniskern. "It involves tremendous responsibilities to clients, to the public and to itself. In view of the above, together with the great importance of real estate in our economic structure, it deserves to be and should be elevated to the position of, and recognized as, a science and a profession," he declared. "A standardization of the methods and theories used in appraisal would create more uniformity in the values found, would result in greater stability in real estate finance and would tend to prevent booms, depressions and other excesses. The plan of certification proposed is aimed to advance this standardization of method."

Standard qualifications for admission to such an institute were advocated by Mr. Kniskern who also outlined classes of membership, methods of examination, methods of certification and disciplinary powers of the proposed Institute.

Home Builders and Subdividers Hold Active Sessions

MANY valuable suggestions to home builders and subdividers were presented in the convention sessions devoted to this phase of realty practice. The meetings were attended by 100 or more developers and subdividers.

Calling upon realtor-builders to cure their blues by examining the details of great previous depressions that also involved other countries throughout the world, and declaring that many factors in the present situation already look more favorable, G. D. Robertson of Los Angeles, asserted that the present depression shows nothing new and that bank closings, collapsing stock markets, slumping commodity prices, bread lines, failures and unemployment have been featured in depressions over the past hundred years. He predicted people busily employed full-time and over-time "in the years ahead." He prophesied factories and industrial facilities operating at capacity and expanding to meet unprecedented demands; stores crowded with customers, and customers endowed with "unparalleled" purchasing power.

Coming Events

July 8-9, 1931—Southern Pine Association, Summer Meeting, Deshler and Wallick Hotels, Columbus, Ohio.

July 16-17, 1931—Carolina Retail Lumber & Building Supply Dealers' Association, Summer Convention, Asheville, N. C.

Aug. 10-15, 1931—United States Building & Loan League, Annual Bellevue-Stratford Hotel, Philadelphia, Pa.

Sept. 17-18, 1931—National Hardwood Lumber Association, Annual, Hotel Sherman, Chicago.

Oct. 13-16, 1931—Illuminating Engineering Society, Annual, William Penn Hotel, Pittsburgh, Pa.

These forecasts, he maintained, rest squarely on the solid facts of the recorded past.

"Business conditions are changing," said Mr. Robertson. "Merchants are buying more stock today than they did a few months ago. Wholesalers are buying larger stock to have on hand. Manufacturers are employing more people. Purse strings are being gradually loosened. The banks and financial institutions of our country are willing to loan much more freely than they have for some little time. Lower rates of interest are obtainable. Building conditions are improving.

"Next to recklessness at the top of a boom, the most foolish thing in the world is discouragement at the bottom," he said. "The foundations of fortunes are not laid in the blue skies of booms, but in the hard pan of depression. After every depression, this country has emerged and risen to peaks of prosperity which astonished everyone but students of economics."

Opportunity Awaits Builders of Summer Homes

"The American people are now learning how to play," said Forris W. Norris, successful developer of a high-grade summer colony in Massachusetts, who was elected to the chairmanship of the Home Builders' Division to succeed Hugh Potter of Houston, Texas. "The trend is definitely out into the country," Mr. Norris said, "especially for the summer months. Permanent summer places are now in demand and such homes may cater to people of small means as well as those who are wealthy."

"An important factor in successful development of summer colonies is to please the children, because people will not buy summer homes unless their

children like the life of the community," Mr. Norris warned his audience.

"Select your prospects among the leading residents of your cities, then use direct mail with plenty of photographs," was Mr. Norris' advice. Mr. Norris has prevailed upon local architects in his locality to submit sketches and plans for specific sites on his properties. When a prospect shows interest in a certain design he is turned over to the architect. In case the prospect goes elsewhere the architect is protected by payment for the sketch and the plans. "This method has operated successfully," Mr. Norris stated.

Is Home Ownership Losing Its Appeal?

"Have we not taken our business too much for granted?" asked Gordon C. Beck, home builder of Cincinnati, Ohio, at one session of the home builders and subdividers. "In times such as the present, have we not comforted ourselves with the thought that home ownership would always be with us? I am not so sure that this smug complacency is justified. Today in America we are in danger of seeing the masses of our people turn away from home ownership, and we shall become a nation of renters if we as home builders do not scrap the old methods and get in step with modern industrial America," warned Mr. Beck. "If people are to purchase homes rather than many less substantial articles now being offered, then new methods must be adopted.

"In my opinion," said Mr. Beck, "we shall have to depart from the use of many materials considered standard and use substitutes in the interest of economy and perhaps durability." But "the home building industry has not been treated fairly in the price of substitute materials or of improved standard materials," he complained, maintaining that the benefit of mass production and volume of sales should be passed along to the building industry.

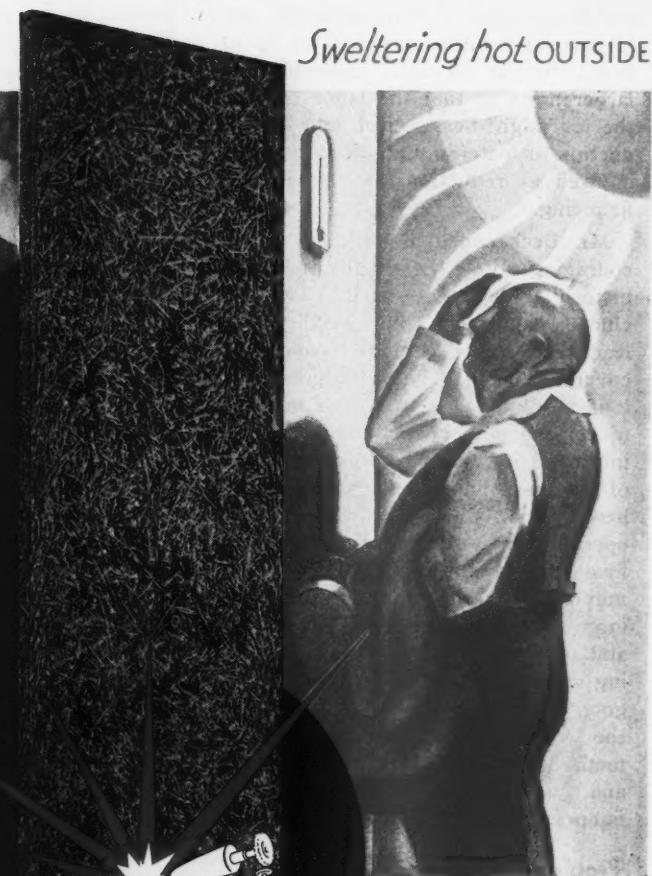
That mortgage interests and some material dealers have had a share in the responsibility for the so-called "jerry builder" was one contention of Mr. Beck's. He wondered how it was possible for such builders to get construction loans, split loans and unduly large loans. That lenders of money should differentiate between the reliable and the jerry builder is essential, in his opinion.

Some method of producing low cost homes for the man of modest means will have to be worked out, Mr. Beck contended. Among the possibilities for reducing cost, in his opinion, are

Cool and Comfortable INSIDE



Sweltering hot OUTSIDE



INSULATION plus FIREPROOFING

.... at no extra cost in this economical insulation board

HERE is a truly remarkable building material: an insulating board that not only provides insulation from summer heat and winter cold, but in addition, gives extra protection from the ever-present fire menace. Thermax turns back fire as easily as heat. It is the only fireproofing insulation board or building unit. Made of treated wood and minerals, Thermax possesses all the desirable features of an ideal building material. It has lightness with structural strength, and can be sawed and nailed like wood. Sufficient thickness to assure positive insulation can be obtained in a single layer of Thermax—yet Thermax is surprisingly low in cost. Write for specification data and sample.

PROVABLE FACTS ABOUT THERMAX

1

Insulation: Thermax combines real insulation with fireproofing; qualifications possessed by no other insulation board.

2

Fireproofing: Thermax, tested in accordance with the standard fire test specifications of the American Society for Testing Materials, meets requirements for Class A fireproof construction.

3

Structurally Strong: Thermax satisfies code requirements for self-supporting insulated roof decks, and non-bearing partitions.

4

Sound-Deadening: Thermax 2-inch partitions transmit less than one-fifth of one per cent of sound.

THERMAX

Insulation plus Fireproofing

THERMAX CORPORATION, Dept. A.
228 North La Salle Street, Chicago, Ill.

Gentlemen: Please send me specification data and sample of Thermax.

Name _____

Address _____

a different type of wall structure, use of materials within a region so as to avoid freight charges, utilization of larger units so that the labor cost on the job might be lessened, and the reduction of material and specialty costs, as well as reductions in the cost of financing.

Mr. Beck ended his talk on an encouraging note. "Personally, I believe history will repeat itself," he concluded, "and that home building will lead the way to general business recovery as it has done in the past. But it is absolutely essential that methods of construction, credit, and finance be improved if we are to make the most of the opportunity which seems almost here. What is needed now is close co-operation of builders, supply men and financial institutions in every community for the purpose of promoting well-planned, well-constructed and properly financed homes. Building surveys should be made. There is good business for all of us 'just around the corner' if we can improve our methods and insist on fair treatment and co-operation from material and financial interests."

Problems of Suburban Development

Some of the problems encountered in forty years of development practice and how they were solved were brought before the division of home builders and subdividers by George B. Simmons, Vice-President of the Roland Park Company of Baltimore, developers of the famous Roland Park community. This development of 1,800 acres was begun in 1891. Since then more than 2,000 houses have been erected, ranging in price from \$12,000 to \$50,000. The four main factors in development practice which must be vigilantly watched, according to Mr. Simmons, are: (1) Financing; (2) Cost of Overhead; (3) Cost of Raw Materials and (4) Cost of Sales Organization.

"The land that is subdivided and developed must possess in itself an inherent quality of location or site value if the community is to be permanently successful," said Mr. Simmons.

Their method of operation has been to pool land and issue stock on it, he brought out. This dividend bearing stock issue is based on sales, all interest and overhead being scheduled on the basis of whether sales are made or not.

Whether a public and private park system in a development is advisable from the business standpoint is doubtful, according to the experience of the

Roland Park Company, as reported by Mr. Simmons.

As to restrictions, he reported that his company has finally worked out the principle that when restrictions expire after a period of twenty years, they automatically continue to be in force for another twenty years unless the majority of the owners decide to have them modified.

All their house plans are passed upon by a committee of trained architects, Mr. Simmons reported. But they do not pay much attention to house values in the restriction, design being the determining factor.

A small, but thoroughly trained force of salesmen, has proved to be a successful selling method for them. Only one price per lot is given and this is strictly maintained. As a result of this there has been very little speculation in their property, according to Mr. Simmons.

That it is poor business to develop a number of sections or areas all at once, was one opinion expressed by Mr. Simmons. Don't start transportation if you can't keep it up, and don't establish unchangeable routes of transportation, were other warnings which he gave.

Their chief publicity medium, and one which had proven successful according to Mr. Simmons, is a free publication, edited by an art expert and which has a circulation of 10,000 copies every month.

Better Way to Finance

Louis Brandt, Housing Engineer of Pittsburgh, advocated to the convention a complete financing plan under which the purchaser, after he has made a minimum down payment, combines all of his other payments in a fixed monthly amount which he deposits with his local bank. These monthly payments include interest on first mortgage, interest and principal on secondary financing, fire insurance, taxes, and a sinking fund for emergencies.

"With a plan of this kind the purchaser can decide exactly what monthly payment he can make," said Mr. Brandt. "This, in turn, establishes the value of the house he can afford to build or buy, and permits him to enter into the proposition with understanding and confidence."

In the course of his address, Mr. Brandt introduced the major phases of the home building problem as it exists today. "We hear much said about standardization in home building and why it has not been absorbed into mass production processes as a means

of lowering costs, but it has been found very difficult," Mr. Brandt pointed out, "to reconcile the individuality each buyer wants, especially on the exterior of his home, with a standardized appearance.

"To know costs is to lower costs," he maintained. For this purpose he advocated a printed listing of all the various materials and classes of work to protect the bidder against omissions and errors.

That the Associated General Contractors of America had already recognized the need for definite reforms by the entire construction industry was made evident, he said, from the fact that the executive officers of this association have recently recommended the creation of a residence builders section to embrace the establishment of a sound system for making appraisals, for grading the construction merit of new structures, for inspecting residences under construction, reporting on the merit of construction methods for first and second mortgage financing and for conducting local co-operative campaign to accelerate sound construction projects.

Residential Developers and The Public

The task of developers today is "to analyze their problems to discover, if possible, why the public is not taking their product with the same enthusiasm as of old, analyze the needs of the public and perhaps, after all, discover what it is the public really wants and to revise the policy accordingly," Arthur C. Holden, New York architect, told home builders and subdividers assembled at the convention.

"Too often," said Mr. Holden, "we fall into the attitude of mere salesmen trying to get the product off our hands which has been produced without a real professional knowledge of the consumptive ability of the public.

"A man pays for the use of a home, not for the home itself," he pointed out. "Where a man buys or rents a home, his motive is to secure the use of that home and he actually engages to pay for its use in rent. This rent may be paid directly to the owner or it may be paid to himself in the form of loss of interest on his capital." The ability of the public to pay this economic rent should be computed every year and used as a basis in producing new structures and in regulating their cost, said the speaker, who pointed out that there are definite limits to what the public can pay for the use of real estate just as there are economic limits to what the public can pay for wheat.

BALTIMORE CONVENTION SPEAKERS ANALYZE OUTLOOK



LOOK AT THE DIFFERENCE

Recognizing that an integral water-proofing material in the mortar helps prevent leaky walls, efflorescence and fading of colors, a compound of the highest water-resisting quality is mixed with Brixment during manufacture—thoroughly, intimately and in the most effective proportion. So when Brixment is used for mortar, it saves the expense of buying a water-proofing compound and eliminates the necessity of constant supervision at the mortar box to see that it is added in correct proportion. The above picture shows the unusual water-repellent quality of Brixment in comparison with other cements.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KY.

District Sales Offices: 1610 Builders Bldg., Chicago; 600 Murphy Bldg., Detroit; 101 Park Ave., New York

Mills: Brixment, N. Y. and Speed, Ind.

BRIXMENT

A Cement for Masonry and Stucco



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

How much land have we in this country, which, as it is at present administered, consumes other sources of wealth to pay carrying charges which the land itself is unable to pay? was one question the speaker put to the builders. The uneconomic and ill-planned utilization of land is a factor in producing blighted areas in cities, he contended, and emphasized that the surplus which the building industry has to fear is that which comes from depreciation and obsolescence.

An American Housing Institute

EDWARD A. MACDOUGALL, President of the Queensboro Corporation of New York, advocated before a general session of the convention, the establishment of an American Institute of Housing to (1) Maintain a permanent housing exhibit in a central location, (2) Supply facilities for study of the best types of housing by interested individuals, (3) Provide a forum where leaders might exchange ideas.

Mr. MacDougall sees, as a necessity, the co-ordination of the work of various elements in the field and proposes his Housing Institute as a solution to the problem of working out a co-ordinated program of effort.

The Influence of Fashions in Homes

"Changing conditions indicate that each family now needs at least three changes in homes during a normal family life," said Paul Nystrom, Professor of Marketing at Columbia University, at a general session of the convention. "These changes not only raise problems for the housing industries but, to those who know how to grasp them, offer opportunities as well," he said.

"The whole trend of modern development is to shorten and lighten household labor," he contended.

In taking up the subject of design, he pointed out that while there are multitudes of possibilities, popular taste at any particular time centers on but a few of such designs. There may be thousands of architectural "styles" but a "fashion" is some style that the public has taken up and adopted. "And it is fashion and not style that determines the commercial success of building," Mr. Nystrom emphasized. "The art of business, if we may call it such, as applied to any line in which fashion is a dominant force, consists in discovering what these trends are and of going with them, not ahead of them, and not behind them."

Professor Nystrom made five suggestions for meeting the changes going on in consumer demand for housing:

(1) Measure obsolescence, not by physical deterioration alone, but by changes in public taste; (2) Intelligent approximate current fashions and select those that are likely to continue for a maximum length of time; (3) Do not underestimate the home modernizing market; (4) Consider the possibility of building shorter-lived buildings; (5) Apply scientific methods to the study of consumer demand.

Features That People Like

Features that have a proven appeal for prospects were dealt with in a paper presented by Irwin A. Blietz of Chicago. "This is the home-buyer's order in the \$10,000 to \$20,000 class," said Mr. Blietz: "We want a good-looking home—one with style—something different—six rooms, two baths, a breakfast room, large living room, the dining room need not be large, the kitchen compact and efficient, the master bedroom of good size, and the size of the other two bedrooms we are not so much concerned about. We do want generous closet space and must have a broom closet."

Other features which are in demand, said Mr. Blietz, are fireplaces, chromium plated sink faucets, dishwashers, cabinets, electric ventilators, electric refrigerators, ironing boards, insulated gas stoves, incinerators and linoleum covered kitchen floors. In the bathroom the prospects think in terms of separate shower stalls, medicine cases with decorated mirrors, concealed electric heaters, and perhaps colored fixtures, he said. There is a demand for linen closets, clothes chutes and sometimes a cedarlined closet, he added.

Home Builders Discuss Problems

THAT real estate values in subdivisions have not declined in any of the cities represented; and, if fairly priced when subdivided, there need be no decline in price now, was the consensus at a problem dinner given by the Home Builders and Subdividers Division on one evening of the convention.

Building costs were freely discussed and it was agreed that there has been a decrease ranging from 12 per cent to 18 per cent. One builder pointed out that costs have come down and, in addition, more is being given in house value in the way of equipment and construction. Engineering costs for improvements were said to have declined about 20 per cent.

Unusually good attendance records at exhibition houses, especially those that are furnished, proves that there is a keen interest in homes in the minds

of the public, according to the opinion of many builders present.

J. C. Nichols, developer of the Kansas City Country Club district, reported that his organization is carrying on aggressively in all price ranges. There has been a decreasing sale of lots for people to build on, he said, and in his opinion this class of buyer is decreasing rapidly, giving way to the buyer who wants the complete house already built on the land.

"In these days we can't depend on people to come out to the property," said Mr. Nichols. "Seek out your prospects!" He emphasized the necessity of coaching salesmen not to make a negative approach nor to express in their manner the prevalent pessimism and hesitancy of the times. Special study of salesmen's problems are needed at this time, he thought.

Prevalent in this round table gathering of home builders and subdividers was a general air of confidence and determination. No forecasts were made but the word was to maintain values for the better market ahead.

Officers Elected

The new Realtor association officers elected, to take office January, 1932, are:

President, Lawrence T. Stevenson, Pittsburgh, Pa.; Vice-Presidents, First, William H. Gardner, Winnipeg, Man., Canada; Second, James B. Fisher, Brooklyn, N. Y.; Third, August C. Sehrt, Milwaukee, Wis.; Fourth, John J. Wagner, Cedar Rapids, Iowa; Fifth, Charles Elmer Rousek, East Orange, N. J.; Treasurer, Mark Levy, Chicago, Illinois.

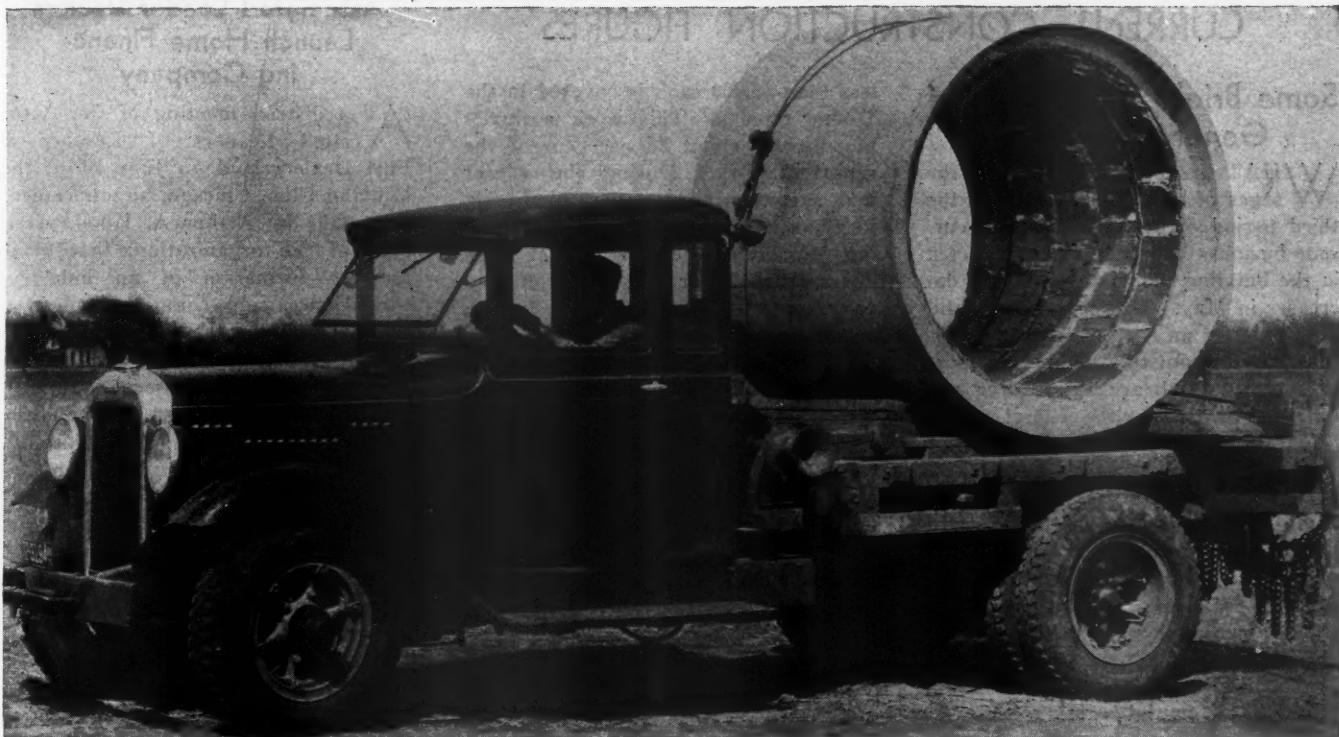
Oil Burner Dealers Organize

PLANS for the formation of more than 2,000 oil burner dealers into one large trade association have been announced by Lionel L. Jacobs, vice-president of the American Oil Burner Association, and chairman of the board of governors of the dealer division. The new organization will be a division of the American Oil Burner Association and will operate under its officers and directors but will be managed by its own executive board. Oliver P. Harris has been appointed managing secretary.

Electric Company Moves

A RECENT announcement states that the Arrow Electric Division of the Arrow-Hart & Hegeman Electric Co., is now occupying its new and larger warehouse and office located at 701-709 W. Jackson Blvd., Chicago.

SUMMARY OF NATIONAL MEETING NEWS AND REPORTS



DODGE RESOURCES GUARANTEE EXCEPTIONAL TRUCK VALUE FOR CONTRACTORS

Part-by-part inspection will prove to you the surpassing merit of Dodge Trucks. Or you can get your proof by actual test. Or you can rely on the recommendations of other business men who own Dodge Trucks and know from actual experience what they will do. > > And whether you use one or all of these yardsticks, you can be certain that exceptional value is guaranteed by Dodge resources. Resources that can be reckoned not alone in dollars. Or in dollars plus modern and efficient plants and equipment. Those are vitally essential, to be sure. But Dodge resources also include a still more important factor—the experience Dodge engineers and workmen have gained in the building of more than four hundred thousand trucks. Experience that assures you the modern design, precision construction and part-to-part balance that will be reflected in greater dependability,

lower cost and able performance throughout the truck's long life. > > See your nearest Dodge Brothers dealer. Inspect and test the type of Dodge Truck (Standard or Heavy-Duty) that exactly fits your needs. You will say it is every inch a modern truck—an exceptional value at its low price.

CAPACITIES IN THE HEAVY-DUTY LINE RANGE FROM 3,600 TO 11,175 POUNDS
—AND UP, FOR TRACTOR AND TRAILER SERVICE. PRICES ARE EXCEPTIONALLY
LOW. -- THE STANDARD LINE RANGES IN PAYLOAD CAPAC-
ITY FROM 1,200 TO 4,300 POUNDS AND INCLUDES THE
1½-TON CHASSIS AT

\$595
F. O. B. DETROIT

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Detroit, Michigan

Send your Operating Record Book. I understand there is no obligation.

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Number of Trucks Operated (Book for each will be sent). _____

DEPENDABLE DODGE TRUCKS

CURRENT CONSTRUCTION FIGURES

Some Bright Spots Despite General Decrease

WHAT has been described by the sages of business statistics as the third period of pessimism in the current business depression was reflected in the building industry by further decreases in May. Those, however, who still hope for an early revival in building activity point to a number of spots of activity which are outstanding not only by contrast with general conditions but also in comparison with last year.

Permit figures, as reported by S. W. Straus & Co., showed a decrease of about 18 per cent from April, as compared with a normal seasonal decrease of 11.8 per cent. Construction contracts awarded for the entire country showed a decrease of 5.9 per cent in May as compared with April. The decrease in residential building, however, amounted to only 3.8 per cent.

Total contracts awarded during May amounted to \$420,858,762, which was divided between the principal classes of construction as follows:

Residential Buildings\$185,269,700
Commercial Buildings 29,510,096
Factories 18,210,192
Educational Buildings 26,672,576
Hospitals and Institutions 5,983,712
Public Buildings 22,378,944
Religious and Memorial 6,475,504
Social and Recreational 11,987,808
Public Works and Utilities 122,022,208

Total \$428,510,740

This estimate of the total volume of contracts awarded for the entire country is made by the AMERICAN BUILDER AND BUILDING AGE on the basis of figures for contracts awarded in the 37 states east of the Rocky Mountains, as reported by the F. W. Dodge Corporation, together with other factors, to provide for building in the 11 western states and for the smaller unreported projects not covered by the Dodge figures.

Building in the 11 western states normally amounts to about 10 per cent of the total for the balance of the country. During May, however, permit figures for these states, as reported by S. W. Straus & Co., reached a total of 12 per cent of the permits for the rest of the country. This percentage has, therefore, been used as the factor to account for these 11 states.

Only a portion of the new building, modernizing and repair projects of

less than \$5,000 each is covered in the Dodge reports. This work normally amounts to about 25 per cent of the reported work. During the winter and early spring months this work, much of which is rural, lags but during May, it reaches the normal level. A factor of 25 per cent has been used to account for it in this estimate. Since practically all this work is home building, it has been classified under Residential Buildings in the tabulation.

One of the bright spots, as reported by the F. W. Dodge Corporation, was in the public buildings classification where May contracts showed an important increase over the preceding month. Dodge reports from the far west also show that for the first five months of 1931, gains over the same period in 1930 were recorded in San Francisco, Sacramento, and San Diego, Cal., and in Spokane and Denver. The New Orleans territory shows a cumulative five months total in excess of that for the same period last year, as does also the Central Northwest District.

Other reports state that Oklahoma City and Tulsa, Okla., as well as a number of cities in the Texas oil region, are enjoying a real building boom.

Most important of all perhaps is the gain, during May, in residential contracts which is reported for the New York Metropolitan Area. Whether this foreshadows a definite revival for the country at large, as it has in past periods of depression, is difficult to determine, but it is evident that when the revival does make its appearance, residential building will take the lead.

To Hold Joint Meeting

A JOINT mid-summer meeting of the Southern Pine Association and the Ohio Association of Retail Lumber Dealers, will be held in Columbus, Ohio, July 7 to 10. H. C. Berkes, secretary-manager of the Southern Pine Association, and Findley M. Torrence, secretary of the Ohio Association of Retail Lumber Dealers, have co-operated to develop an interesting program centering around distribution as the problem of the hour.

Manufacturers and distributors will be brought together for an intimate discussion of every process of distribution. Invitations are not confined to the manufacturers who usually sell in Ohio, or to distributors and users in that state.

Associated Leader Dealers Launch Home Financing Company

AT a district meeting of the Associated Leaders of Lumber & Fuel Dealers held on June 10, at the Midland Club, Chicago, announcement was made by Arthur A. Hood, president of the organization, that plans for the formation of an industry-owned mortgage company had been brought to a successful consummation.

At Detroit, on June 4, the organizing committee, composed of Fred J. Robinson of the Fred J. Robinson Lumber Co., Detroit, Mich.; Alton J. Hager, Hager & Cove Lumber Co., Lansing, Mich.; W. L. Hixon, Hixon-Peterson Lumber Co., Toledo, Ohio; and as alternate: Fred Wehrenberg, Standard Lumber & Supply Co., Fort Wayne, Ind., met and took steps to incorporate the National Homes Finance Corporation, a Delaware corporation. Nearly \$2,000,000 of the common stock has already been subscribed. The first stockholders' meeting is set for Tuesday, July 14, 9:30 A. M., at the Congress Hotel, Chicago.

The incorporation of this financing company follows many months of work by Arthur A. Hood, president of the Associated Leaders, and Emory J. Lee, associate of Ames, Emerich & Co. (Inc.), both of Chicago. In both structure and purposes, the new company is substantially the same as outlined in the AMERICAN BUILDER AND BUILDING AGE of January, 1931.

To review the plan briefly, the National Homes Finance Corporation will make its credit facilities available to the public through dealer stockholders, financing up to 75 per cent of the value of new owner-occupied homes, on a 15-year pay-off, the mortgages carrying 6 per cent interest, and monthly payments of \$8.44 per thousand financed.

Starting with about one hundred dealer stockholders operating in nearly three hundred markets, the National Homes Finance Corporation services are expected to be available very quickly in five hundred additional markets, ultimately serving several thousand American communities.

Consolidate Boston Branches

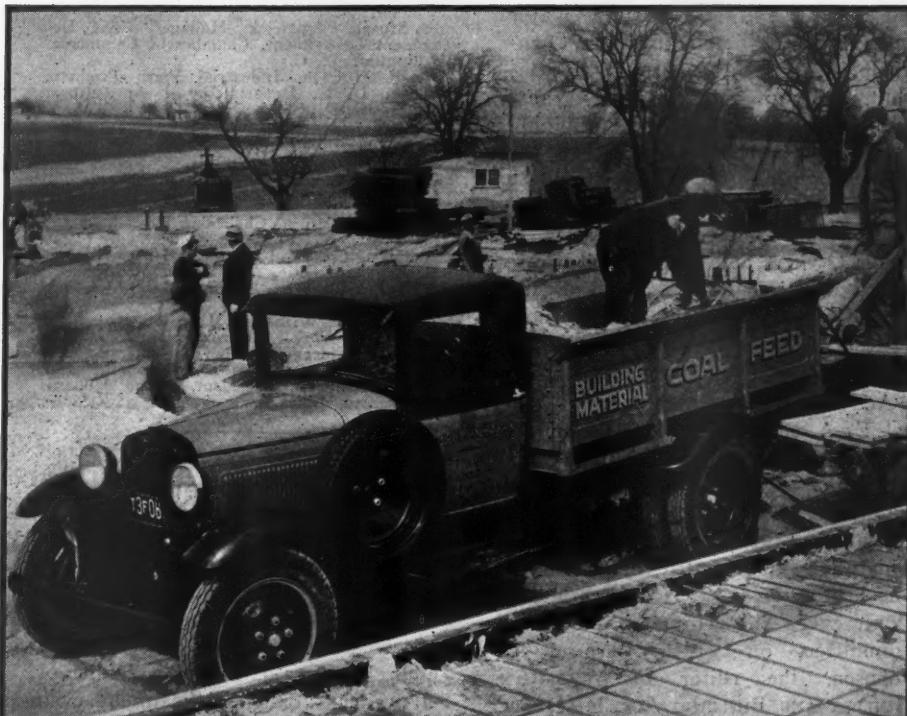
EFFECTIVE June 15, 1931, all Boston branch sales offices and warehouses of the Armstrong Cork Company, were consolidated in one office located at 286 Congress Street.

STATISTICAL AND HOME FINANCING COMPANY NEWS

Unload the cement . . . then back for more

CONTRACTORS and builders everywhere are using the Ford 1½-ton heavy-duty express truck to keep their hauling costs low. It is an exceedingly strong and rugged truck, with a wide range of speed and power. Its large and sturdy body is built for rough usage and heavy loads . . . for hauling all kinds of supplies and material. Because of its low first cost, long life, reliability and operating economy, this Ford truck will do your hauling at a very low cost per mile.

Other Ford trucks that are seeing wide service in the building trades are the stake, platform and dump trucks. With the Ford 1½-ton chassis, there is a choice of open or closed cabs, single or dual rear wheels, high or low rear-axle gear-ratios, and 131½-inch or 157-inch wheelbase. All are low in cost, and are available from Ford dealers everywhere. In most principal cities there are centralized exhibits of Ford trucks and light-delivery cars.



Ford heavy-duty express truck

The body is exceedingly rugged, and is designed for carrying heavy loads of any kind of material. It is built of steel over wood, with an especially durable floor-board construction. Sides are 18 inches high, with wide flare-boards. The floor is built of weather-proofed boards, and the joints covered with steel skid-strips, sunk flush and bolted into place. The tail-gate is steel outside over wood inside, with skid-strips protecting the boards. It is equipped with hinges and chains of unusual

strength. Special, extra wide fenders, used with dual rear wheels, give full protection.

Among the most valuable mechanical features of the truck are the three-quarter floating rear axle, with spiral bevel gear of special design; the sturdy front axle and spring; the 4-speed transmission; the large, fully enclosed brakes, the same size on all wheels; the Triplex shatter-proof windshield; the 40

kinds of steel, and the more than 20 ball and roller bearings in its construction.



President's Conference Activities

AT a meeting in Washington on May 21st, the Home Ownership and Leasing Division of the President's Conference on Home Building took up in detail the problems of home ownership. A preliminary outline for the home ownership investigation, on which the members of this division will base their work, includes nine main subjects on which the committee will submit recommendations after a thorough study and a complete investigation by various members. The subjects which this committee will consider are among the most important and significant of all the problems which face the President's Conference, and comprise the following major topics: Current Trends in Home Ownership, Home Buying as an Investment, Determining What One Wants—Buying or Building, Determining Where and When to Buy, How the Home Owner's Investment Can Be Protected, Laws Affecting Home Ownership, Community Interests of Home Owners, and Educational Work.

Active investigation has already started in all these fields and the next meeting of the committee in Washington will find reports ready.

Active on this committee is Colonel E. A. Simmons, President of the Simmons-Boardman Publishing Company and of the American Builder Publishing Corporation, publishers of **AMERICAN BUILDER AND BUILDING AGE**. This publication is also represented in another division of the President's Conference, the Home Modernizing committee, on which Bernard L. Johnson, the editor of **AMERICAN BUILDER AND BUILDING AGE**, is serving. This committee held its initial meeting on May 25, at Washington and laid plans for a thorough coverage of its important assignment.

The members of the Home Ownership and Leasing committee of the President's Conference are:

Chairman, Ernest T. Trigg, President, John Lucas & Co., Inc., Philadelphia.

Secretary, John R. Riggelman, Senior Economist, Division of Building and Housing, Department of Commerce.

B. F. Affleck, President, Universal Atlas Cement Company, Chicago.

Frederick M. Babcock, Appraiser, Evanston, Ill.

John Donlin, Editor, The Plasterer, Cicero, Ill.

Ernest M. Fisher, Professor of Real Estate, University of Michigan, Ann Arbor, Mich.

G. S. Rogers, Serving for F. Stuart Fitzpatrick, Director, Civic Development Department, Chamber of Commerce of the United States, Washington, D. C.

Ernest A. Hale, Suffolk Co-operative Bank, Boston.

Miss Harlean James, Executive Secretary, American Civic Association, Washington, D. C.

John H. Kirby, President, Kirby Lumber Co., Houston, Texas.

M. J. McDonough, President, Building Trades Department, American Federation of Labor, Washington, D. C.

E. L. Sullivan, representing Elmer T. Peterson, editor, *Better Homes and Gardens*, Des Moines, Iowa.

Colonel M. C. Rorty, American Founders Corp., New York City.

Colonel E. A. Simmons, President, Simmons-Boardman Publishing Company and American Builder Publishing Corp., New York City.

William M. Steuart, Director, Bureau of the Census, Washington, D. C.

Charles Warner, President, Warner Company, Philadelphia.

Dr. James Ford, Serving for Dr. John M. Gries, Department of Commerce, Washington, D. C.

The Members of the Committee on Reconditioning, Remodeling and Modernizing are:

Chairman, Frederick M. Feiker, Director Bureau of Foreign and Domestic Commerce, Washington, D. C.

Secretary, C. Christenson, Dept. of Commerce, Washington, D. C.

George L. Bliss, Vice-president, The Franklin Society, New York City.

L. J. Briggs, Assistant Director, Bureau of Standards, Washington, D. C.

Joseph E. Chandler, Architect, Boston.

Miss Emily W. Dinwiddie, Director Children's Bureau, Department of Public Welfare, Richmond, Va.

F. Stuart Fitzpatrick, Manager, Civic Development Department, Chamber of Commerce, Washington, D. C.

H. P. Holman, Industrial Farm Products Division, U. S. Department of Agriculture, Washington, D. C.

Bernard L. Johnson, Editor, American Builder and Building Age, Chicago.

Mrs. W. F. Lake, President, Federated Women's Clubs of Arkansas, Hot Springs, Ark.

Joseph D. Leland, Architect, Statler Building, Boston.

Miss Grace Morin, Chairman, Household Art Department, N. Y. State College of Home Economics, Cornell University, Ithaca, N. Y.

R. Brognard Okie, Architect, Philadelphia.

Miss Ethel Power, Editor, House Beautiful, Boston.

Mrs. Charles W. Sewell, Director, Home and Community Work, American Farm Bureau Federation, Chicago.

Frank S. Slosson, Realtor, Chicago.

A. Trieschmann, President, Home Modernizing Bureau, Chicago.

negroes, who constitute less than 7 per cent of the population of Chicago. Moreover, the income of negroes is lower than that of other groups and their security of employment is less. The risk of vacancy and delinquent rents was, therefore, correspondingly great. In addition the site purchased was expensive boulevard property.

There are, in all, 421 apartments in the Rosenwald project. The buildings cover only 37 per cent of the block and are constructed around a central garden which has the proportions of a small park. The smallest apartment is three rooms and the largest five. All have outside light either on the street or on the landscaped gardens. All apartments are equipped with modern plumbing, mechanical refrigeration and such luxuries as parquet floors. The average monthly rental is \$62.50. Despite the business depression the occupancy has been 97.68 per cent.

"Frankly," says Alfred K. Stern, director of the Rosenwald Fund, "we did not foresee how heavy the odds were against us. We did not know, at the time we let our contracts in 1928, that we were going to put up our buildings at the very peak of high costs in the building industry. The last units of the building were completed in October, 1929, just a month before the market broke. There is no reason to doubt that, if we were building today, we could cut at least 15 per cent from our costs, and probably more. Nevertheless we have not written down our investment to accord with contemporary costs, and we are still able to show a moderate return."

Speaking of the possibilities for business stabilization brought out by this experiment, Edwin R. Embree, president of the Rosenwald Fund, said, "we are now thinking of model housing as a means of restoring economic stability. If we could induce capital to flow into housing projects, for which the need is incalculable, as anyone must admit who travels about any of our great cities, there would be no unemployment of building mechanics to trouble us for a generation. The incomes of railroads, from hauling building materials, would be greatly increased, and so on through other allied industries.

"The nation is on a dead center economically, although there is plenty of money available for investment today, as the success of the Mellon loan indicated. If some of it could be invested in housing, or, in other words, if housing can be shown to be safe and profitable, our economic difficulties would begin to fade."

Housing Experiment Proves to Be Paying Project

THE annual report of the Michigan Boulevard Garden Apartments, Chicago, the experimental housing project conceived and carried through by Julius Rosenwald, shows a return of 5.9 per cent on the investment even in the depression period. This experiment has demonstrated the practicability of providing better housing for small income families, and possibilities of replacement housing as a business and industrial stabilizer.

Some three years ago, impressed with the hundreds of ancient buildings which provided neither pleasant nor wholesome dwelling places for thousands of Chicago families, Mr. Rosenwald undertook this housing project to test whether such operations could be made to pay and provide an investment for conservative private capital, seeking security and a moderate return rather than large speculative profits.

The Michigan Boulevard Garden Apartment was deliberately planned under unfavorable circumstances to provide a real test of the idea. The apartments were to be rented only to

HOME OWNERSHIP AND HOUSING EXPERIMENT REPORT

REO QUALITY IN THE LOWEST PRICED TRUCK FIELD

NEW $\frac{1}{2}$ TON REO

*... with a wide range of
Reo bodies to fit your needs*

In the entire field of low price trucks, only the new $\frac{1}{2}$ -Ton REO SPEED WAGONS embody all these excelling features:

Powerful 4 and 6 cylinder truck engines with *five* and *seven* bearing crankshafts; maximum piston displacements; full force feed oiling even to the piston pins; chrome nickel cylinders that wear seven times longer; extra large 7" deep frames; full floating rear axles; long, heavy springs; Spoksteel wheels; and large internal, self-equalizing hydraulic brakes!

Wheelbases are longer, with greater loading spaces back of the cab. With this sturdy chassis, Reo is prepared to supply every popular type of panel, stake, express or dump body—also special types for special needs. Prices are low and quality extraordinary.

A drive under load—over test routes of your own choosing—will tell more about the smooth, powerful action of these new

\$625

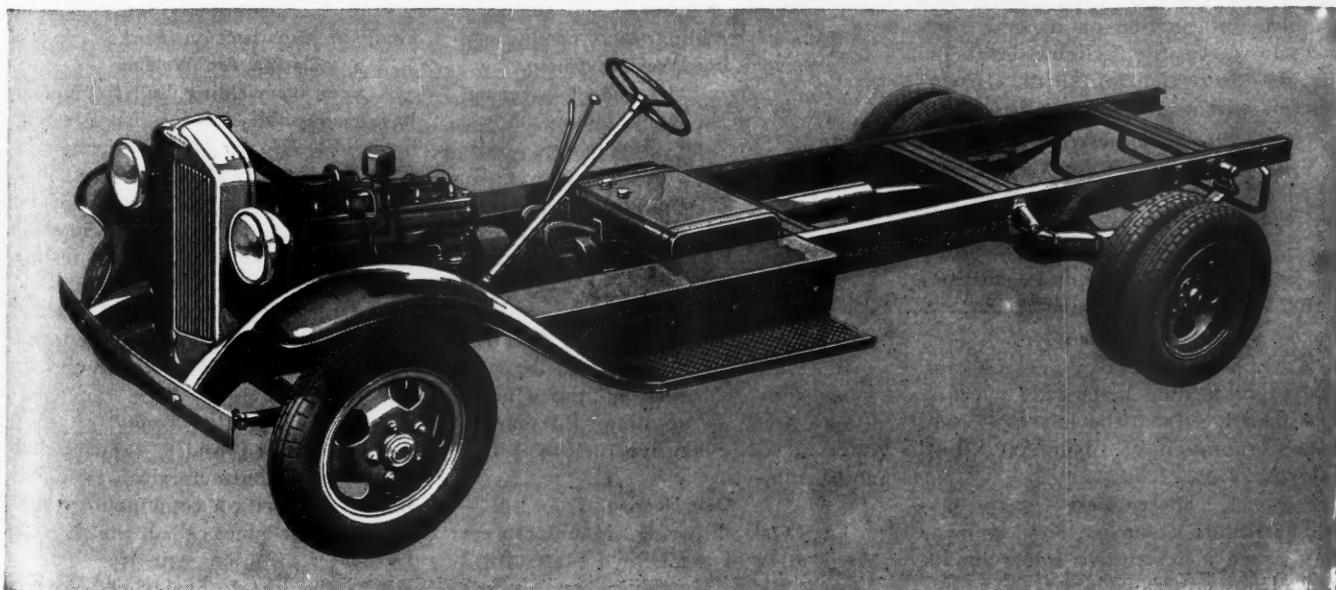
Four-Cylinder \$625, Six-Cylinder \$725
Chassis f. o. b. Lansing, Michigan
DUAL WHEELS EXTRA

Speed Wagons than words could possibly convey. Note carefully the savings in time and gas—and the *exceptional* size and strength of vital parts.

Any Reo salesman will gladly show you a portfolio which proves, by illustrated life-size comparisons of parts, the real and indisputable margin of Reo superiority.

By all means, see this SPEED WAGON before you buy!

REO MOTOR CAR COMPANY
LANSING — TORONTO



The Builder's Library

Offered by Book Publishers

"Estimating Building Costs"

A second, revised, and enlarged edition of this standard book by Charles F. Dingman, which supplies much of the data needed for estimating and also offers an all-around training in methods of handling the whole estimating job, has been brought out by the McGraw-Hill Book Company, Inc., 370 Seventh Ave., New York City. Price, \$2.50.

"Code of Arbitration"

This volume, containing the "Practice and Procedure of the American Arbitration Tribunal", edited by Frances Kellor, first vice-president of the American Arbitration Association, with members of the association staff collaborating, has been published by the Commerce Clearing House, Inc., 205 W. Monroe St., Chicago. Price, \$5.00.

"Building Code"

A fifth edition, completely revised to 1931, of the Building Code recommended by the National Board of Fire Underwriters, 85 John St., New York City, has been published by that organization. It contains an ordinance providing for fire limits, and regulations governing the construction, alteration, equipment, repair, or removal of buildings or structures. Free to city officials and engineers, committees on code revision and architects. Furnished in quantities at a nominal price.

Equipment for Buildings

Nofuze Load Centers

The Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has issued Circular 1913, presenting complete information on its new Nofuze Load Centers, circuit breakers for the protection of small electric systems without the use of a fuse box.

Steel Cabinet Work

"Distinctive Cabinet and Case Work in Steel" is the title of a booklet offered by the Olean Metal Cabinet Works, Inc., Olean, N. Y., presenting its equipment for hospitals, institutions, residences, and apartments.

Water Heaters

Water heaters for all types of steam and vapor heating boilers are covered in a pamphlet from the Excelso Products Corporation, 65 Clyde Ave., Buffalo, N. Y.

Kitchen Sinks

The Kohler Company, Kohler, Wis., has issued a descriptive folder on its new Duostrainer equipped sinks, under the title "Now—Sinks of Greater Usefulness."

Check These Items Every Month and Write for Those You Need to Keep Your Files Up to Date. Any Item Listed Will Be Sent Free on Request Except Where a Price Is Noted. The American Builder and Building Age Should Be Mentioned When Writing for These Publications.

"Airport Floodlighting"

This is Catalog 218A for the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., and contains complete information on this company's lighting equipment for airports.

Construction Materials

Interior Finish Material

Micarta, the new interior finish material made by the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. is fully described in a new booklet entitled "A New Material for Interiors."

Steel Door Frames

An illustrated booklet on Kalman steel door frames has been published by the Kalman Steel Company, Wrigley Bldg., Chicago, showing their adaptability to modern designs.

Cedar Closet Lining

"Aromatic Red Cedar Closet Lining" is the title of Commercial Standards Bulletin CS26-30, issued by the Bureau of Standards. From the Superintendent of Documents, Government Printing Office, Washington, D. C. Price, 5 cents.

"Lime Mortar"

"Lime Mortar—Its Relation to Water-tight Masonry", a new booklet published by the National Lime Association, directs attention to the problem of leaky masonry and suggests a means of avoiding such conditions.

Wrought Iron Welding Elbows

An engineering data sheet covering the new wrought iron welding elbows perfected by the Locomotive Terminal Improvement Company, Railway Exchange, Chicago, in co-operation with A. M. Byers Company, has been prepared by the former organization.

Stainless Steels

A treatise on stainless and heat resisting alloy steels prepared by the subsidiary companies of the United States Steel Corporation, Pittsburgh, offers a comprehensive review of this entire subject.

Oak Flooring

The Oak Flooring Manufacturers Association of the United States, 1812 Sterick Bldg., Memphis, Tenn., offers a booklet on the subject "Laying, Finishing and Care of Oak Floors."

Miscellaneous Publications

"Government Building Publications"

Letter Circular LC-290, of the Department of Commerce Bureau of Standards, contain a complete list of the Bureau's publications relating to building materials, home building, home ownership, city planning, and zoning, most of which can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

"Golf Course Commonsense"

This book, by G. A. Farley, published by the Farley Libraries, Cleveland Heights, Ohio, is a comprehensive, non-technical treatise on the subject of golf course maintenance and includes much information on concrete work suitable for golf courses.

"Things to Make of Wood"

The American Floor Surfacing Machine Company, 514 S. St. Clair St., Toledo, Ohio, will send free of charge a valuable list of 250 practical and salable articles to make of wood, as well as information on obtaining plans, blueprints and instructions for making these articles.

Contractors' Equipment

The Ford Truck

"The Ford Model A Car and Model AA Truck" is a new edition of this very complete manual of construction, operation and repair, by Victor W. Page, published by the Norman W. Henley Publishing Company, 2 W. 45th St., New York City. Price \$2.50.

"On Jobs Like These"

Under this title, the International Harvester Company, 606 S. Michigan Ave., Chicago, offers a booklet illustrating the use of its trucks on all kinds of construction work.

Electric Arc Welding

A new arc welding bulletin No. 15, has been published by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., containing illustrations of unusual arc welding achievements and explaining methods of obtaining good welds and of testing.

Are Welded Mill Buildings

The Lincoln Electric Co., Cleveland, Ohio, has issued a pamphlet containing plates of welded lattice frames for mill buildings.

"Slack Time Profits"

An illustrated folder, showing how builders and contractors can earn slack time profits with a combination wood-working machine called the Electric Carpenter, will be sent free by The American Floor Surfacing Machine Company, 514 S. St. Clair St., Toledo, Ohio.

NEW!...

"EDGE-LITE" and APLAKAY make new jobs!

**JOIN THE THOUSANDS
WHO WILL MAKE GOOD
MONEY THIS SUMMER!**

HERE is your chance to get many good-sized remodeling jobs in apartments, hotels and homes. Here is the way to make extra profit on each new building job. Put in the new, popular "Edge-Lite" cabinets and the "Edge-Lite" Aplakay outfit!

"Edge-Lite" Cabinets are selling like wildfire to hotel, apartment and home owners. Show your prospects that the "Edge-Lite" has two fixtures that slide in slots around the mirror. This cuts out shadows when shaving, and gives women a regular movie-star's make-up mirror!

For extra bathrooms and lower-priced homes, suggest the lower-priced "Edge-Lite" mirrors without cabinets. For remodeling, suggest the still lower-priced Aplakay sets. Aplakay is an adjustable silver lacquer frame with sliding slot fixtures. You just put it on the wall around any old-style cabinet and transform it into an "Edge-Lite." Aplakay is going big in remodeled hotels, apartments and homes.

Contractors report big profits

Builders everywhere say "Edge-Lite" and Aplakay are the easiest way to make money they ever saw. They say, "Just tell hotel and apartment owners how 'Edge-Lite' and Aplakay dress up the place and help get guests and tenants. Just tell home owners how 'Edge-Lite' and Aplakay have gone into the fine hotels and homes all over the country." Get your share of these easy profits!

Tie in with National Advertising

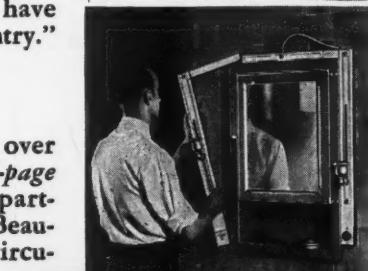
The "Edge-Lite" Cabinet and Aplakay Set have gone over big without advertising, but now we're launching a full-page campaign in national home magazines and hotel and apartment magazines such as House and Garden, House Beautiful, Hotel World, and others totaling many million circulation among buyers. Will you let this opportunity slip away, or will you join the thousands who will make big money this summer on Aplakay? Henkel Edge-Lite Corporation, 904 North Franklin St., Chicago. In Canada, Henkel Edge-Lite, Ltd., Head Office, Architects' Bldg., Montreal, Que.

SPECIAL OFFER!

Send for full color catalog and special Contractors' and Builders' Proposition today!

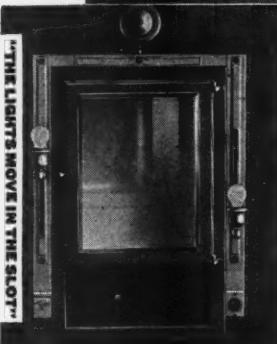


"THE LIGHTS MOVE IN THE SLOT"



The "Villa Venice," one of many popular "Edge-Lites" for homes, apartments, hotels. Has cabinet frame containing sliding slot fixtures, is ready wired.

\$37.50 complete (list). Write for contractor's prices.



Aplakay Set transforms old cabinets into "Edge-Lites." Adjustable, ready-wired, easy to install, as shown.

\$13.00 complete (list). Write for contractor's prices.



The "Manor," for lower-priced homes, second bathrooms, etc., is an "Edge-Lite" without cabinet. There are several other models, all wired.

\$13.50 complete (list). Write for contractor's prices.

Henkel "EDGE-LITE"
CABINETS ♦ MIRRORS ♦ APLAKAY

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Insulate with U. S. MINERAL WOOL

The perfect insulator

**COLD PROOF . . . HEAT PROOF . . . FIRE PROOF
SOUND PROOF VERMIN PROOF**



Cooler Rooms During Summer's Heat!

Insulation in your home provides an effective shield against intense summer heat. All rooms, even attic rooms are made many degrees cooler.

Insulation with Mineral Wool is a year-round protection, comfort and money-saver. It actually saves about one-third of your winter fuel bill year after year and the cost of installation is the first and last cost.

Mineral Wool repels both heat and cold, deadens sound and reduces fire hazard. Because of the nature of Mineral Wool, vermin cannot live in it.

Send for FREE booklet which explains how your home can be made more comfortable and be better protected at a positive saving. Sample of Mineral Wool accompanies booklet.



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Send FREE sample and illustrated booklet to

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City..... State.....

Producing Thousands of New Houses

(Continued from page 33)

builder in Altoona, Pa., says that costs are 20 per cent lower. He is now engaged in erecting low-cost homes from \$3,500 to \$5,000 in price. In Allentown, Pa., one builder announces 7 homes now under construction, totaling \$125,000.

Substantial groups of homes are reported under way in such cities as Buffalo, New York, where one builder has built 50 two-family houses in 1931 at 15 per cent less cost.

Typically Active City

Home building is continuing its gains in cities like Buffalo, N. Y., where money has been released for mortgage purposes. During the first two weeks of May in Buffalo, the largest group total of recorded construction was in single and two-family dwellings amounting to \$421,500 as compared with only \$239,000 for a similar period a year ago. The average cost per house has been \$7,800 as compared with \$11,300 in 1930. In the short period between May 1st and May 15th in this city, four apartments were recorded. Included in the proposed volume of construction are projects covering 57 single and two-family dwellings estimated to cost \$423,500, and 7 apartments, amounting to \$86,000.

Other Cities Active

Buffalo is not the only active town in this area. New proposed work in Erie County, New York, exclusive of Buffalo, totals nearly \$1,500,000. Single and two-family dwellings are the outstanding types of construction, with 60 at \$496,000 in Tonawanda, New York; 50 at \$425,000 in Amherst, New York; 14 at \$143,000 in the Village of Kenmore; 6 at \$55,000 in Williamsville.

The importance of residential building is clearly shown in the following figures from Buffalo, New York. Of the \$1,485,000 reported in contemplated construction projects in the city, residential building is to receive \$1,079,500. Erie County, New York, a month ago, produced \$1,991,400 in contracts awarded and of this, \$1,067,400 was for residential construction.

Intense Activity in the New York Area

The gratifying construction totals above recorded are upstate in New York. In coming close to the metropolis, the construction activity increases rather than diminishes and in Westchester County, Long Island, Western Connecticut and Northern New Jersey, suburban home building is proceeding at a healthy clip. This is because mortgage funds have been released into building activity and builders in the New York area are experienced in providing the public with what it wants on easy financial terms.

In Westchester County, New York, home building has continued at a surprising rate. In April, a total of \$1,954,900 was recorded for 254 families and this figure surpassed that of the previous month and of April a year ago.

For May, in the city of White Plains more than \$172,500 was recorded in one-family house construction, \$185,000 in one and two-family construction in Mamaroneck, \$82,000 in Rye, \$237,000 in Scarsdale, \$16,000 in Larchmont, \$188,700 in Greenburgh. One builder has a three-year program of more than 500 homes. He has already built and sold more than a dozen houses, is

(Continued from page 100)

BLOCK THIS "talk it over" TALK



"Can we?" "Had we better wait?" "Shall we look around some more?" Such indecision cuts into your profits!

Armstrong Floors help do away with prospects' indecision

PROSPECTS who spend days—and maybe weeks—"talking it over," do so at your expense. Delayed decisions are costly, and undecided buyers run up sales expense—cut down profit. Any-

thing you can do to help prospects make up their minds means money in your pocket.

Here's a hint that has helped speed sales for others. Modern floors of Armstrong's Linoleum, individualized and specially designed, will give your houses the instant appeal that urges prospects to *buy now*.

It's *easy* to have individualized floors with Armstrong's Linoleum. There are more than three hundred designs to choose from. These may be combined in exclusive effects. Armstrong's Linosets (special insets) and Linostrips (feature borders) make it quite easy to plan floors that are exclusive with the houses you build.

Just the name "Armstrong's" will help you sell your houses, too. Armstrong Floors have been nationally advertised for years. They are recognized as first quality floors. Women *know* that cleaning is easier, housework lighter with these modern floors throughout the house. And men know that Armstrong's Linoleum is a lifetime floor. That there's no refinishing or replacing once this floor is cemented in place.

More Floor Facts. In "Home Decorator's Idea Book" you will find valuable decorative hints—modern floor facts. You'll want a copy for your files. Just address Armstrong Cork Co., Builders' Service Bureau, Lancaster, Pennsylvania. *Product* A



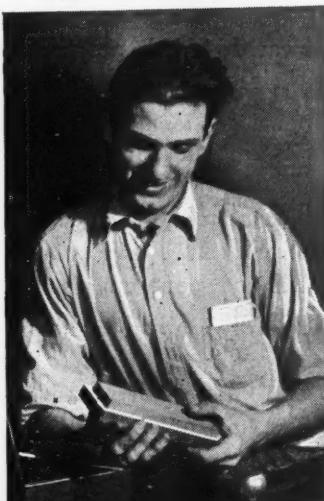
an individualized Armstrong Floor (Design 13130 with feature strip) laid in the Lisher and Ratto model home at Napa, California. Feature strips and special insets make it possible for you to have a differently designed floor in every house you build.

Armstrong's Linoleum Floors

for every room in the house

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REG. U. S. PAT. OFF.

TAKE advantage of
the nation-wide "fix-up" cam-
paign. Speed up your jobs by keeping
your tools sharp—ready—keen—cutting.

Use this "combination" stone. Made of
genuine Carborundum Brand Carbide of
Silicon; fast cutting, clean cutting. Coarse
grit on one side, and fine grit on reverse.

\$1.00 from Your Dealer
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Send me your booklet C-2:
"How to Sharpen Wood-Working Tools"

NAME.....

ADDRESS.....

Producing Thousands of New Houses

(Continued from page 98)

rapidly pushing ahead with a score more and has sold sites and plans for a number of others yet to be constructed. This builder is selling homes on the small estate idea with designs specially drawn to harmonize with other homes in the community, yet distinctive in themselves. Prices range from \$10,000 to \$20,000 and over and sales are proceeding so fast that they have orders ahead.

In the development of Hartsdale Fells, Westchester County, New York, a project of 10 new houses at \$20,000 apiece is being started this month. The builders have just completed and sold 20 houses in a nearby town.

In the whole of Westchester County, New York, there is the huge total of \$15,000,000 for new construction of which about \$9,000,000 represents outlay for new residential construction.

One Westchester developer reports the house demand greater than a year ago. "Most of our inquiries," he says, "are for third-acre and quarter-acre plots; and in the house market the demand is for stone and brick-type buildings, with seven or more rooms and three baths. Attached two-car garages are the rule, rather than the exception. From \$22,000 to \$30,000 is the average home-buying investment."

Long Island, in the state of New York, is experiencing one of the most active home building periods it has ever known. It is said that builders are actually finding it difficult to keep up with the demand for moderate-priced dwellings and construction seems to be evident on every side.

Within 15 days, more than \$19,000,000 in houses has been planned. Operations of housing developers during the first part of the current year have almost doubled their record for the same period of 1930. The same is generally true of apartment house construction.

Several thousand houses in the moderate price range are under construction on the Island. The great bulk of this building is in the Queens section where houses are being put up in groups of 100, 200 and 500. Not since the boom days, it is said, has there been so much small-house construction in progress.

Newspaper estimates give \$5,000,000 per week as the sum that is being invested in small dwellings in this section. One building firm reports an average of several house sales per day, the sales price being about \$7,000 each.

Financing seems to be readily available for these houses and it is reported that the present buying movement is more substantial financially than those of previous years because buyers are paying large equities. The greater responsiveness of labor to present economic conditions, it is claimed, is a big factor in the values now being offered on Long Island while the low prices of materials have also contributed to reduction in the costs of homes.

"We have averaged sales of more than 500 homes a year for the last four years," says George M. Gross, president of Laurelton Homes, Inc., one of the most successful of Long Island developers.

"There has never been a time in my experience," he says, "when I have seen such desire expressed for home ownership. It has reached proportions beyond our most optimistic predictions at the beginning of the year. Our sales, since the introduction of the new studio homes, have averaged approximately 23 houses per week. In

(Continued to page 102)

Speaking with Mr. Fred T. Ley

of the Fred T. Ley Company

the other day:

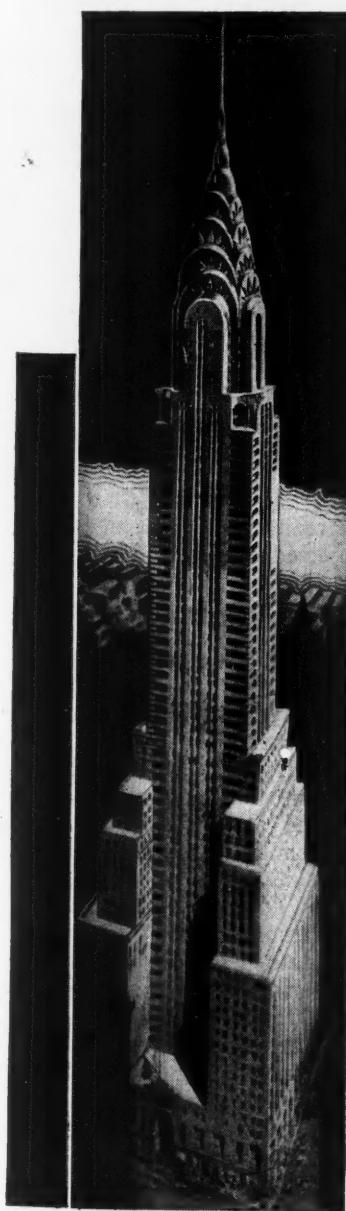
● Mr. Ley said: "The foundation of the Chrysler Building is an eloquent testimonial to the efficiency of Anti-Hydro. We went down over forty feet, encountered two subterranean streams, which created a head of water of over twenty feet. This job was a severe test of the waterproofing and quick-hardening qualities of Anti-Hydro. The cooperation of your field service men, both on the job and at the plant of the Ready-Mixed Concrete Corp., was most helpful. We are 100% satisfied with Anti-Hydro."

Chrysler Building
Architect
William Van Alen



● The world-famed Chrysler Building is the crowning achievement of Mr. Ley's career. Of the many buildings that he has constructed, none received more painstaking care than this one. Only the best materials were chosen, the most advanced engineering ideas employed.

It is naturally very gratifying to have had Anti-Hydro chosen as the one dependable integral waterproofer and hardener for all concrete work on a job that, in Mr. Ley's own words, was "a severe test." More and more, where absolute reliability and the element of time enter into construction work, Anti-Hydro is being unanimously specified by architects, builders and owners.



ANTI-HYDRO

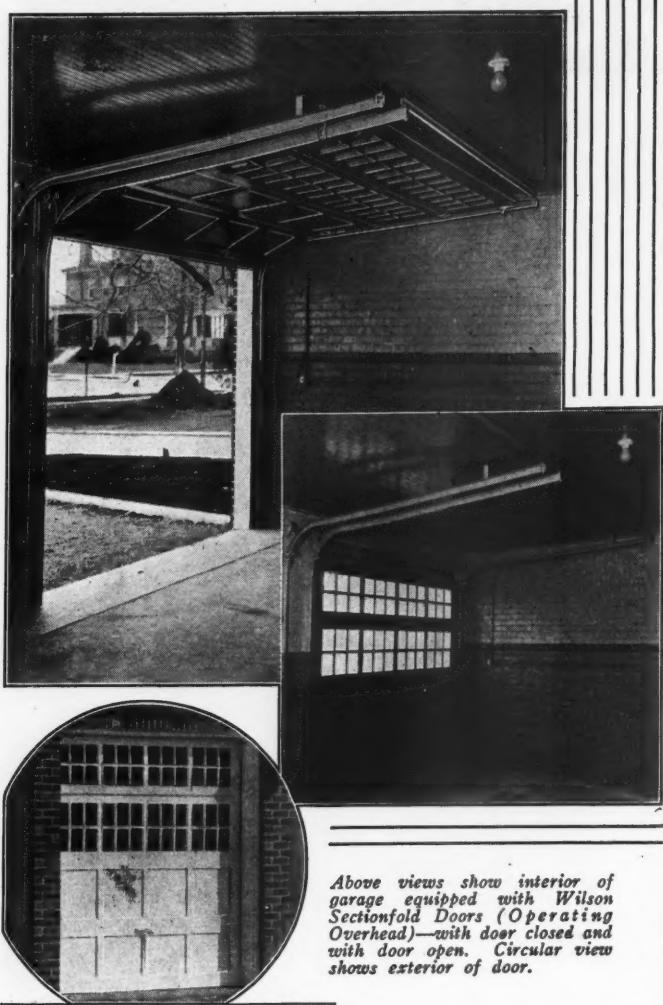
WATERPROOFING COMPANY

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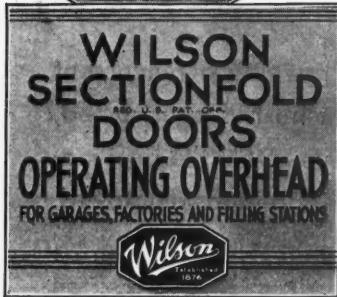
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(Continued to page 100)

property values this means that the public has been investing more than \$165,000 weekly in homes in this one development."

Single-family and attached houses are not the only types that are experiencing the strong upward swing. There has been recently announced for Long Island, N. Y., a large apartment development in which homes will be provided for 1,000 wage earners at moderate rentals. The first of eight units is already underway and it is estimated that millions of dollars will be spent in making this a model apartment colony. The apartments will be unique in design, thoroughly up-to-date in appurtenances and equipment, spacious in size of rooms and yet within the means of the wage earner in rental. They will be supplied with refrigerators, combination sinks and tubs, the latest type gas ranges and ample cupboards, tiled bathrooms with tubs and showers, medicine cabinets, modern plumbing fixtures and radio outlets.

Other Regions Report Activity

This residential building activity is not confined to New York and its environs. The fact that various parts of the country are active is reflected in reports from the central Northwest, the Ohio Valley, the Southwest, the Middle Atlantic States, the Eastern Seaboard and the Pacific Coast.

Philadelphia, always noted for its home building, is again showing an increasing interest in home construction. A number of building permits for blocks of houses have recently been taken out and also for three or four apartment houses, a type of housing which is becoming increasingly popular in this city. Reports of various architects and builders show a fair amount of work contemplated as well as a number of plans in progress. One architect reports to AMERICAN BUILDER AND BUILDING AGE that he is busy on plans for three apartment houses and is designing a number of residences.

Bernard J. Newman, president of the Philadelphia Housing Association reports that "a comparison of absorption over an eight-year period shows that the recent absorption capacity warrants a larger construction program than has been projected to date in 1931."

Permits Being Taken Out in Many Sections

Offices of the building inspectors in many cities report an increasing number of permits being issued. Typical of the activity in residential building are the reports from the following towns:

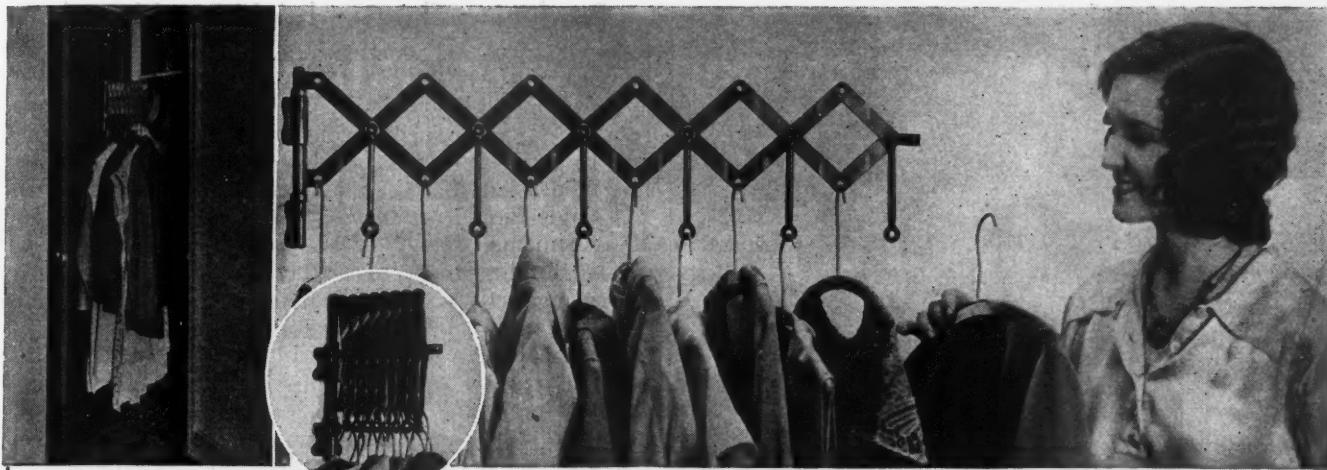
The city of Saint Paul reports permits issued for the first five months of this year, to the number of 130 single-family dwellings valued at \$711,060, 9 duplex dwellings valued at \$75,000 and 2 apartments valued at \$66,000.

Rochester, N. Y., reports 66 one-family dwellings since January 1st and 4 apartment houses.

Baltimore, Maryland, has issued permits for the first five months of this year covering 1139, two-story brick dwellings valued at \$4,500,000; three-story brick dwellings valued at \$126,000; 108 two-story frame dwellings valued at \$525,000 and 4 apartments valued at \$500,000.

The city of Yonkers, New York, since January 1st, has issued 211 permits for dwellings and 5 permits for apartment houses.

(Continued to page 104)



One of the "Hood" equipped closets of the Temple Square Hotel.



Temple Square Hotel, Salt Lake City, Utah, one of the many fine hotels equipped with Extension Garment Hangers throughout.

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HOOD Extension Garment Hangers eliminates poles, nails and hooks; more than double the available storage space in closets, making them neater, more attractive and easier to keep clean.

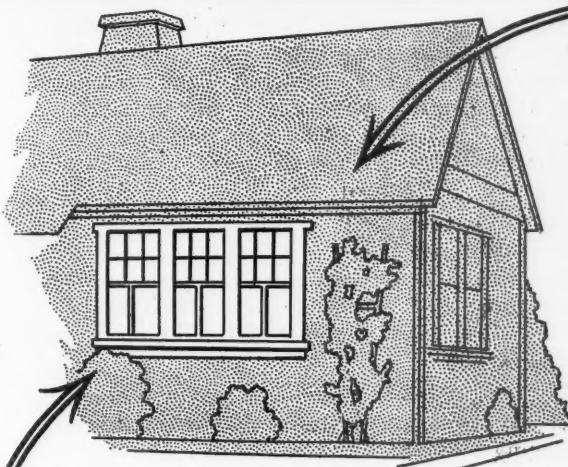
When not in use, this hanger collapses into 8-inch space, taking the garments back against the wall or door, out of the way, making easy access to any part of the closet. Garments rest lightly against each other without packing or wrinkling. A slight pull extends the hanger, bringing each garment into plain view.

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FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Producing Thousands of New Houses

(Continued from page 102)

Down in Oklahoma City 38 permits for one-family residences were issued during the month of May alone, and 15 permits for two-family residences. For the first five months of this year, permits have been issued for 234 single-family residences, 105 two-family houses and 10 apartments.

The Building Inspector's office of Philadelphia reports increasing activity. Since January 1st, permits have been issued for 376 dwellings and six apartments.

The city of Ann Arbor, Michigan, is one of those that reports a permit record of more than 30 houses since the opening of the year.

That a strong upswing in the construction of low-cost housing and apartments for those of modest means is imminent is evidenced by the activity of housing corporations engaged in the production of new types of housing and in the erection of group housing.

There has recently been announced by the Buhl Foundation of Pittsburgh, the start of a \$2,000,000 housing project that will involve the erection of three hundred residences for rental to families of moderate wage earners.

Several groups are working on the production of low-cost metal houses. One of these companies will soon erect two model houses on Long Island, New York, both steel-framed. One will be a bungalow, 40 feet by 28 feet to sell for \$5,700 and the other a story-and-a-half home to sell for \$7,800. Before fall this organization expects to begin a program of twenty-five or thirty houses.

Another national organization that has been specializing in the production of fire-safe homes built of combined masonry and steel construction reports a healthy demand for their homes throughout the country. At present these homes have been and are being constructed in the following licensee territories: Milwaukee, South Bend, Detroit, Birmingham, Toledo, Cincinnati, Hamilton, Cleveland, Akron, Pittsburgh, Altoona, York, Baltimore, Summitt and South Orange, N. J., Long Island, White Plains, Greenwich, Sound Beach, Buffalo, Hartford, Providence, Boston, Springfield, Albany, Troy, Schenectady, Rochester, Buffalo, Niagara Falls, Ann Arbor.

From Spokane, Washington, reports come that a building program amounting to \$5,000,000 is under way. Of this volume, residential building represents about \$1,500,000.

In Los Angeles and San Francisco, the construction of brick apartments and stucco dwellings is active, the cost ranging from \$8,000 to \$15,000.

That building progress has been remarkable in California is the report of one real estate broker. He describes the construction of several manufacturing plants that have resulted in the building of one-story homes nearby. Dozens of other concerns are developing their coast distribution, it is said, thereby paving the way for increased residential construction.

In the Ohio Valley, residential building activity compares very favorably with normal years. In a recent issue of a sectional building paper covering this region, more than 160 houses and 13 apartments were listed for one week alone and in another weekly issue 102 dwellings and 13 apartments were recorded. These were not all contract awards, some of them reported were plans in progress, indicating the potential strength of coming construction.

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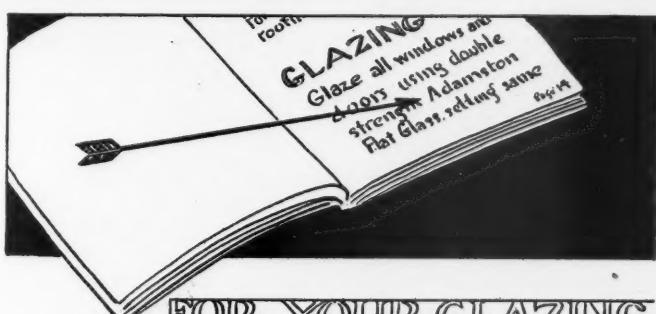
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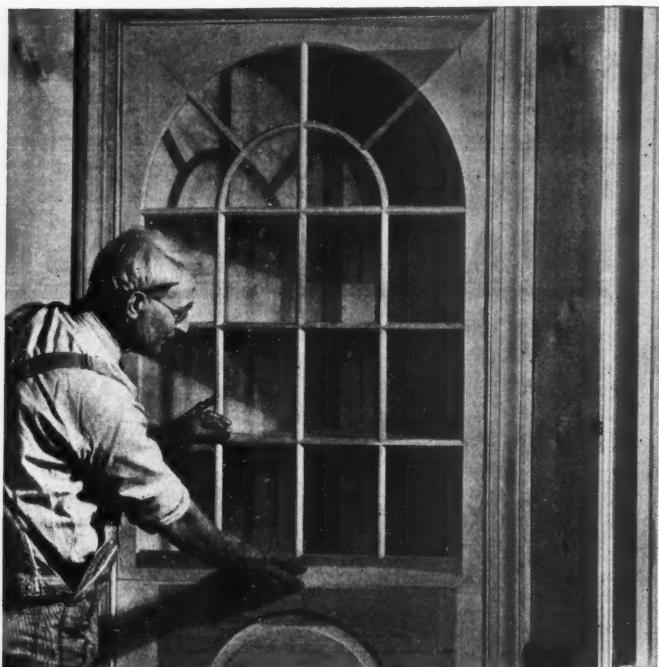
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PROTECT HOMEOWNERS, LUMBER DEALERS, ARCHITECTS AND BUILDERS

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

Production of Low-Cost Housing

(Continued from page 69)

psects that the difference in cost between the two houses would be considerable; it is not so easy to get them to pay for the first house, which is the one they really desire.

Can those things that the public has been educated to desire in a house be reduced in price? They are already being *produced* on a mass production basis. Can they be *distributed* more cheaply? Let us ask this blunt question: Can the prices of building products and equipment be cut so as to reduce the price of a single house materially and still leave a reasonable profit for the manufacturer and for the dealer? Here is one of the most fundamental questions facing the building industry today. Much has been said about the substitution and utilization of new building materials, manufactured and synthesized by modern industrial methods. But if the prices that are put on new products and materials are actually higher in price than older products or offer no substantial saving in cost, then they are of questionable value in the building industry today. It may be that the answer lies in a study of distribution problems and a reducing of credit risk costs by eliminating irresponsible builders. Whatever the solution is, it must be found before houses can be reduced materially in cost as they are constructed today.

In order to be able to pay for the better things of life, say some economists, the people must earn higher wages and in turn they will spend more for necessities and for luxuries. The question is, however, whether we do not get twisted sometimes on what we think of as necessities and what we consider luxuries. If the latest home equipment and conveniences are considered necessities, is bad construction a luxury?

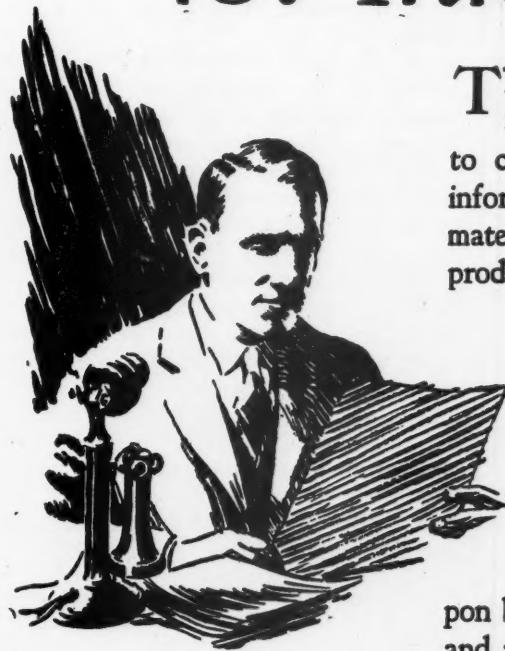
The question of the wages to be paid to labor has, of course, been debated continuously and heatedly ever since the country was established. Even now, in connection with this question of housing, there are two diametrically opposed schools. One says: Pay higher wages; the other says: Cut down wages in order to reduce costs.

What is the relative percentage that goes to labor and the relative percentage to materials in house construction? According to preliminary figures covering the city of San Antonio released from the 1929 construction census of the government, the percentages run approximately 38% for labor and 62% for materials for building construction, in this particular town. In other sections the relative percentages might be closer to 45% for labor and 55% for materials. A study of 175 houses built in a development on the Eastern seaboard shows an almost 50-50 distribution of labor and material costs as illustrated here in the form of pie charts.

There are many builders who feel that the percentage which is paid to labor must be reduced, and local arrangements are often made whereby cheaper labor is secured for particular jobs. But when we consider building construction over the country as a whole, we at once enter a complex economic field when we bring up the question of wages. There are the wages paid the tradesmen on the job, the fees paid to the architect, the fees paid to the realtor, to the title fixer, to the lawyer, the wages paid to the lumber yardmen, the wages paid by the railroads to the employees that transport building materials, the wages paid in the factories that make specialties, items of equipment and materials of all kinds.

(Continued to page 108)

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THE American Builder and Building Age Service Department is ready at all times to co-operate with its readers in securing information regarding all kinds of building materials, contractors' equipment, special products used in the building field—in fact, any information of this nature which may be desired. This department will gladly place its readers in touch with reliable manufacturers of equipment, appliances, machinery, tools and building products of every description. Just fill out the coupon below—please print or write your name and address plainly and check your occupation—and mail to American Builder and Building Age. The Service Department will

give your inquiry attention at once, and ask reliable manufacturers to send you their catalogs, price lists, and any other information you desire. This service is absolutely free to readers.

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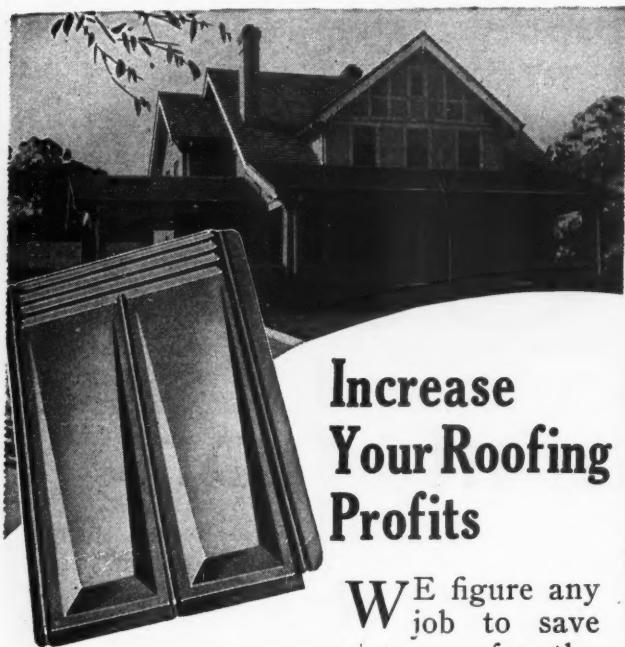
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The Edwards Manufacturing Co.
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Cincinnati

Production of Low-Cost Housing

(Continued from page 106)

Our American wage system is a network, it is practically all of a piece; it is difficult to say where we can make reductions without making corresponding reductions in another part of the field.

There are those who say that the cost of construction cannot be laid to the rising cost of material and labor because these increases have also affected other industries, yet these other industries have shown reduced prices for their products.

But Leonard P. Reaume of Detroit points out that, in the past 25 years, the wages of a typical building trade, viz., bricklaying, increased 92% while production per man decreased 40%. On the other hand, though factory wages increased more than the bricklayers', 118%, production per man increased 49%, with only a slight increase in unit labor cost as compared with a much greater increase in unit labor cost for bricklaying.

Yet in those countries where uniformly low wages prevail in the building, as well as other trades, the housing situation is being settled by governmental subsidy, something which we do not want to happen here. Undoubtedly, paying lower wages would reduce costs in housing construction as well as in the construction of vessels or locomotives. At the present time, labor gets approximately 25% of the construction dollar.

Perhaps, after all, the real solution to the problem is to so design and build a house by means of simple units that the whole question of construction and labor costs will be settled by the very nature of the construction itself. But this is a problem that must be left in the hands of some powerful research institute or some organization or group of organizations capable of making all experiments and tests essential to produce a feasible solution. What is a feasible solution? It must be a solution that adequately satisfies these five requirements:

(a) A home unit that is detached to insure privacy and which engenders pride of ownership, or row-housing so arranged as to eliminate the disadvantages of this class of housing in the public mind.

(b) A home unit that satisfies the public idea of good design.

(c) A home unit that is livable under all climatic conditions.

(d) A home unit so low in cost that the average man can afford to buy one.

(e) A home unit for which manufacturing, assembling, distributing and servicing problems have been thoroughly worked out.

Thus we see that the problem of producing low-cost housing is not solely one of costs. There is the question of public preference for single family, apartment or row houses and there is the question of design.

Do people want to live in single, detached houses, in row houses, in apartment or tenement houses? In cities like Philadelphia and Baltimore, the construction of attached row housing has been so developed as to provide single family dwellings, two stories in height for sums ranging around and below, \$5,000. But is this type of housing generally popular throughout the country?

Within recent years there has been a pronounced tendency to house more and more families in apartments rather than in single family dwellings. We find a growing tendency to merge houses together into apartment-like formations and, as has been pointed out, it is difficult sometimes to tell exactly what the distinction between an apartment and a house is.

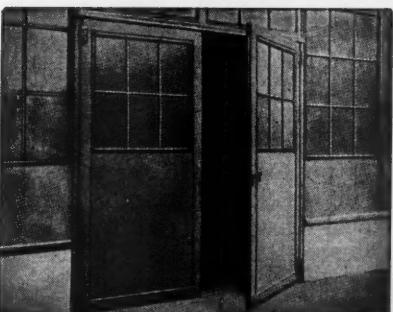
It is possible to erect row and apartment housing at substantial savings in cost over detached houses, but

(Continued to page 110)

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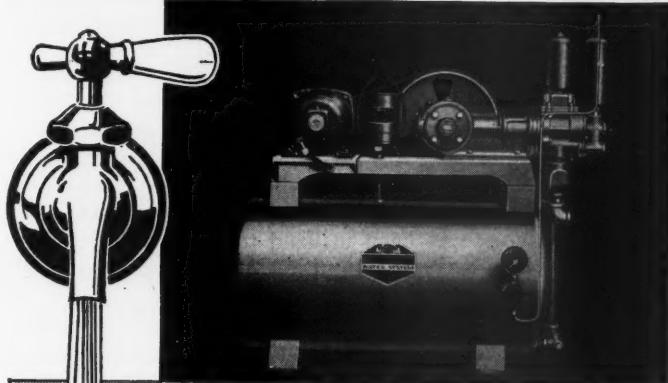
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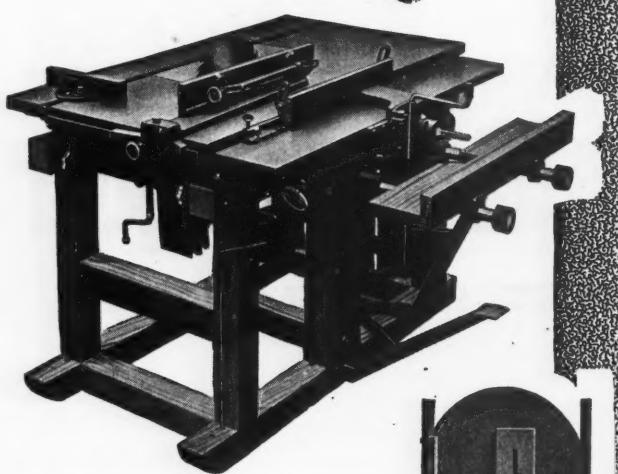
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*Makers of Woodworking
and Saw Mill Machinery*

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Production of Low-Cost Housing

(Continued to page 108)

will these types of housing be acceptable to the public at large? We are here dealing with a social, psychological fact, not an economic fact, and it is a fact that must be taken into consideration.

Another social and psychological fact of the greatest importance is the public preference in design. "Man's ideals of beauty change", said a modernistic architect in discussing the developments that would probably occur in house design in the future. "Get people to accept the new lines and forms of modernistic construction and it will be possible to reduce the cost of construction to just the degree that it will be possible to eliminate the costly design elements that now feature many of our residences."

This, in effect, is the argument of the modernistic designer. Perhaps there is a lot in it. With flat surfaces, large window openings grouped together, flat roofs, new materials on exterior and interior, it will be possible to reduce materially the present day costs of construction. But to the modernist this is primarily a question of design. He does not try to duplicate or imitate the older types of houses. "No!", he says, "let us have a house whose design fits its function even if we have to make a radical departure from tradition!" But the modernistic designer does not have to depend, for his living, on the construction and sale of houses. He does not have to get down in the street and deal with the average home seeker.

People Still Like the Colonial

Although it may be true, as some say, that everyone will build in modernistic fashion two decades from now, it is equally true that, in the meantime, folks show a greater preference for the Colonial, for the English and for other traditional styles that meet their ideas of beauty. Until those ideas of beauty are changed or modified, then we must continue to produce shelter on the basis of these traditional styles. The tragedy is that, in trying to adapt row housing, for example, to these accepted styles, atrocities are created that have no relation to the structural function and that are hideous burlesques on the styles so grossly imitated. In the production of apartment housing we have fared better, for in the latest productions in this field, modern brick work has been utilized to splendid advantage and has given us rich, dignified effects that are really an advance.

But what shall we say about single family designs? People still demand individualistic treatment which means costly workmanship on materials that are easily cut, shaped, and formed on the job. And so the builder is apt to say: "They can never adapt factory methods to house building. A house is an individual thing, an independent creation that must be fashioned on the site."

How then can we furnish the home-seeker with an economical house, of a design that he will like, by following traditional lines of construction?

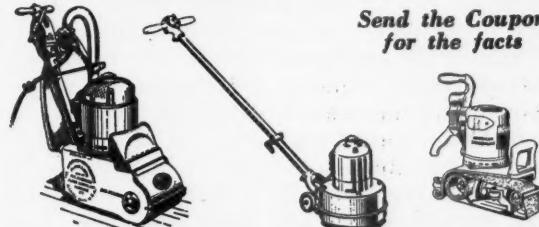
In the next and final article of this series, we will attempt to show twelve ways by which the builder can reduce his costs and still have a salable house and we will describe and illustrate actual projects where different combinations of these methods have been worked out in a practical way.

(This is the second of a series of three articles on The Production of Low Cost Housing. The third and final article of the series will appear in the August number of American Builder and Building Age and will show how successful builders have succeeded in cutting costs.)

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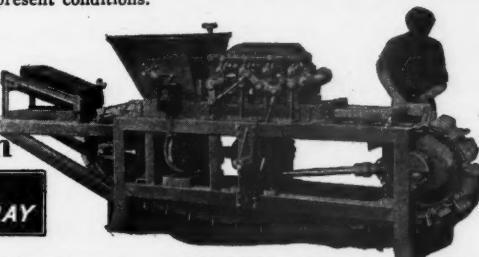
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Includes 22" band saw,
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rip and crosscut saw
and borer.

PARKS
WOODWORKING MACHINES

A Home Building Bargain Year

(Continued from page 49)

can see the advantage of building in a low market so that the value of their property will increase as price levels arise.

This type of appeal should be very effective among those in a position to build, both those who have the money but are holding on to it and those who can raise the money on their personal credit, but have for one reason or another refrained from doing so. The same type of appeal would and does impress those who have control of public and industrial construction, but the chief opportunity for producing results at this time lies among the prospective home owners, for the industrial and public builders are thoroughly aware of the opportunities this market offers and are anxious to build as and if the needed capital can be made available.

In such a situation, where the building industry has the price argument in its favor, those who will benefit from maintaining a fair level of house construction through the present dull times, should take on the spirit of crusaders, doing all they can to give a national campaign character to the business of getting the public to realize its economy opportunities. The idea of modernizing assumed national campaign proportions during recent years, and it has meant a vast deal of increased business to mechanics, contractors, materials dealers and manufacturers. While there are no figures to show the gross total of business that resulted from it, many contractors know that the home modernizing idea has kept more than one pot boiling. So, the build a home this year idea has possibilities for assisting the building industry in weathering the storm, and it would seem to be a smart idea for everybody concerned with building to do his utmost to make the public realize that 1931 is a "Home Builders' Bargain Year." When 1932 rolls around with its increased housing needs, as existing information indicates it surely will, the building business will again be in a position to take ample care of itself. Meanwhile, if we properly promote our present advantage, the consumer will get the benefit of economy prices and the builder should get the benefit of a normal flow of business to tide over the long low swing in the business cycle.

Fact Finding in Building Field

(Continued from page 76)

partly responsible for the report of widespread building activity on the part of the dealers. Of course new developments are coming to light with amazing rapidity these days; it is necessary to constantly study changing trends as reported from various parts of the country in order to secure early knowledge of the success or failure of these new developments.

Perhaps the lessening of building during the past eighteen months has worked unpredicted benefits to the entire industry. Certainly the investigations to show actual conditions are doing a good job to benefit all divisions of the industry. You men in the field will appreciate more intelligent marketing of building products; building field writers welcome new data; and the merchandisers of building products immediately appreciate the worth of this new material.

To keep the information thoroughly up-to-date, however, requires additional supplementary investigations from time to time; so if you should find a letter or questionnaire in your mail some fine morning, you'll be helping with the big job by furnishing the requested information as soon as possible. After all, there is nothing about good building activity which needs be hidden.